

Bendte L. Fagge. Usability Study of Request Functionality in Website User Interfaces at Duke University Libraries. A Master's Paper for the M.S. in I.S. degree. November, 2015. 109 pages. Advisor: Robert Capra

This paper presents the results of a usability study on request functionality conducted using web page interface mock-ups of Duke University Libraries' website. The study focused on account logins as well as single- and multiple-item requests. In addition, participants had to select delivery locations and assess the clarity of confirmation status for the requests. Results of this study identify areas where these interfaces can be improved, particularly around account login for users who have Library Card accounts and for requesting multiple items at one time.

Headings:

Request functionality

Interlibrary loans

Document delivery

Library storage centers

Library websites

User experience

User interfaces

USABILITY STUDY OF REQUEST FUNCTIONALITY IN WEBSITE USER
INTERFACES AT DUKE UNIVERSITY LIBRARIES

by
Bendte L. Fagge

A Master's paper submitted to the faculty
of the School of Information and Library Science
of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements
for the degree of Master of Science in
Information Science.

Chapel Hill, North Carolina

November 2015

Approved by

Robert Capra

Table of Contents

1	INTRODUCTION	3
2	LITERATURE REVIEW	6
2.1	INTERLIBRARY LOAN REQUESTS	7
2.2	OFFSITE OR REMOTE STORAGE REQUESTS AND DOCUMENT DELIVERY	8
2.3	ARCHIVAL MATERIAL REQUESTS	10
2.4	USABILITY RESEARCH OF REQUEST FUNCTIONALITY ON LIBRARY WEBSITES	11
2.5	REQUEST FUNCTIONALITY VIA DUKE UNIVERSITY LIBRARIES' WEBSITE	12
3	METHODOLOGY	14
3.1	OVERVIEW	14
3.2	PARTICIPANTS	14
3.3	USABILITY TEST AND QUESTIONNAIRES	15
3.4	EVALUATION MEASURES	18
4	RESULTS	19
4.1	PARTICIPANT PRIOR EXPERIENCE	19
4.2	TASK 1: SINGLE ITEM REQUEST VIA LIBRARY CARD ACCOUNT	22
4.2.1	<i>Task 1 Completion Summary</i>	29
4.2.2	<i>Task 1 Quantitative Questions</i>	31
4.3	TASK 2: SINGLE ITEM REQUEST VIA DUKE NETID ACCOUNT (COPIES AVAILABLE IN MULTIPLE LOCATIONS INCLUDING ARCHIVES)	34
4.3.1	<i>Task 2 Completion Summary</i>	41
4.3.2	<i>Task 2 Quantitative Questions</i>	42
4.4	TASK 3: REQUEST MULTIPLE ITEMS AT ONCE VIA DUKE NETID ACCOUNT	46
4.4.1	<i>Task 3 Completion Summary</i>	52
4.4.2	<i>Task 3 Quantitative Questions</i>	55
4.5	MEASUREMENTS ACROSS TASKS	59
4.6	POST-TEST QUANTITATIVE QUESTIONS	61
4.7	POST-TEST INTERVIEW	64
5	DISCUSSION	69
6	RECOMMENDATIONS	72
6.1	"LIBRARY CARD / GUEST ACCESS" LINK ON DUKE SIGN IN PAGE	72
6.2	REQUESTING MULTIPLE ITEMS	73
6.3	"GET THIS TITLE" PAGE (FIRST INSTANCE, SINGLE-ITEM REQUEST)	74
6.4	"GET THIS TITLE" PAGE (SECOND INSTANCE, FOR SELECTING DELIVERY LOCATION AND PLACING REQUEST)	75
6.5	CONFIRMATION PAGE	76
7	CONCLUSION	77
	BIBLIOGRAPHY	78

APPENDIX A: RECRUITMENT EMAIL.....	82
APPENDIX B: QUESTIONNAIRES.....	83
DEMOGRAPHIC QUESTIONS.....	83
POST-TASK QUESTIONS	84
POST-TEST QUESTIONS.....	85
POST-TEST INTERVIEW.....	85
APPENDIX C: CONSENT FORM	86
APPENDIX D: OBSERVATION SCRIPT	91
APPENDIX E: “GET THIS TITLE” REQUEST INTERFACE REVISIONS	96
TASK 1: REQUEST INTERFACE REVISIONS	97
TASK 2: REQUEST INTERFACE REVISIONS	101
TASK 3: REQUEST INTERFACE REVISIONS	104

1 Introduction

In a world of on-demand services where books can be ordered and accessed immediately and students often prefer to use Google or Google Scholar rather than academic library resources, how do academic libraries compete? In the mid-to-late 2000s, the term “Library 2.0” emerged (Ayre, 2007; Casey & Savastinuk, 2006). Casey and Savastinuk (2006) note that Library 2.0 is “user-centered change” that “. . . encourages constant and purposeful change, inviting user participation in the creation of both the physical and virtual services they want, supported by consistently evaluating services.” Casey & Savastinuk, 2006, para 3) Similarly, Forrest (2009) notes that libraries have changed their focus in recent years from providing transactions to providing service and are now placing attention on experiences in the library. The term ‘user experience’ is used to describe this emphasis that libraries are placing on users. While user experience in academic libraries can encompass several areas of focus such as the library’s website, signage, and physical spaces, oftentimes the main focus is placed on the library’s website or other digital systems and user interfaces (Bell, 2014). With retailers setting the bar for easy-to-use websites and instant or quick access to products, academic libraries should incorporate similar features into their user experience (Levine-Clark, 2014). In particular, library websites are key to making the process easier for users to get what they need in a timely manner.

One aspect of library websites that can cause confusion for users is request functionality, which provides users the ability to request library materials (Ayre, 2007;

Kenefick & Devito, 2013). However, the numerous steps involved in finding, requesting, and eventually obtaining library materials is often referred to as “transaction costs” (Ayre, 2007, para 9). For example, a user may have to create separate accounts in order to request items from their library’s offsite storage facility, request items through interlibrary loan, and request onsite use of archival materials. In addition, user interfaces for requesting materials may be challenging to navigate and oftentimes users can only request one item at a time which makes for a cumbersome workflow, especially if a user needs multiple items from one collection. This is quite a different experience from commercial websites such as Amazon where a user can simply add items to their cart and check out with only one click.

In spring 2014, Duke University Libraries formed a team to assess the request functionality of the library’s website. The three types of requests users can make using Duke Libraries’ website include: requests for materials stored offsite at Duke’s Library Service Center, interlibrary loan requests, and archival material requests. In addition, some users, such as faculty and graduate students, can request materials that are on the shelf at any of the Duke Libraries (i.e., on-the-shelf materials can be pulled for these users and held at the library of their choosing). After the team at Duke met for several months, they proposed recommendations for making these types of request processes easier for users. Currently, Duke is implementing a new integrated library system and this effort also includes making many of the proposed improvements to request functionality on the library’s website. The goal of this study is to assess the functionality and ease of use for new and revised user interface designs that will be used to request items from Duke University Libraries that are on the shelf or items that are stored offsite at Duke’s

Library Service Center. The specific interface changes being tested include: account login, placing requests for single and multiple items, selecting delivery location, and the clarity of confirmation status.

2 Literature Review

Since the days when most interlibrary loan requests were initiated via paper forms, academic libraries in general have widely implemented online systems for initiating requests. Oftentimes several different request systems are used to accommodate various types of requests such as interlibrary loan, offsite or remote storage requests, and archival material requests. In addition, these request systems are based on different back ends and use different front-end user interfaces. Given these different systems used to place requests, it can be challenging for a user to navigate various interfaces to complete request tasks.

After reviewing the literature to learn about request and delivery services used in libraries, Mitchell and Yu (2007) found the following five types to be the most common:

1. Real-time provision of electronic resources not held by the library through patron initiated requests.
2. Library mediated delivery (via print or electronic means) of materials held by the patron's home institution.
3. Federated handling of requests for materials held by sister libraries via expedited means.
4. Request and delivery of items held in off-site storage locations.
5. Door-to-door service for print circulation (checkout/delivery, renewal, and return/pickup) services. This may include library-to-patron or library-to-library services. (Mitchell & Yu, 2007, p. 334)

In addition to these five types of delivery, academic libraries that have archival collections may also have specific systems for requesting onsite use of these materials.

2.1 Interlibrary Loan Requests

Wessling (1993) and Delaney (1997) both describe one of the earliest systems built to request library materials electronically via the internet. While Wessling (1993) refers to this system as the “ILL electronic access service”, Delaney (1997) refers to this as the “ZAP project”. This system was built at Colorado State University to automate interlibrary loan (ILL) requests and was launched in 1991 (Delaney, 1997). Wessling notes,

This service allows the users to make ILL requests from a home or office computer, twenty-four hours a day, seven days a week. Users need only a computer from which they can telnet or dial into the mainframe. Rather than making a trip to the library to fill out an ILL request card, the user can submit a request electronically for an article, book, dissertation, thesis, government document, or technical report (Wessling, 1993, para. 3).

In addition, Delaney provides details about the thought given to the user interface of this system. “The design began by assuming that a good ILL system should include efficient, up-to-date programming, an understanding of ILL fundamentals and an extremely simple, easy-to-use interface.” (Delaney, 1997, p. 143). Delaney also notes, “It was important that the resulting interface did not require any special knowledge, experience, or ‘intuition’ by the user.” (Delaney, 1997, p. 144) Following the system built at Colorado State University, OhioLINK was launched in 1992 (Kohl, 1998; Prabha & O’Neill, 1998). The OhioLINK system connected academic libraries in Ohio via a shared online catalog that allowed users to initiate interlibrary loan requests (Kohl, 1998; Prabha & O’Neill, 1998).

While earlier versions of online request systems were developed by libraries themselves, vendors of library systems started to create modules for interlibrary loan requests soon after. Porat (2001) describes how in 1997 the University of Haifa Library

in Israel started using “. . . the ILL module of the existing library management system software Aleph (www.exlibris.co.il)” (Porat, 2001, p. 109). The main goal of using this ILL module was to improve customer service, particularly in the ease of use of the system since users could now make requests outside of the library’s regular hours and from remote locations (Porat, 2001). Burk (2006) discusses another vendor’s product, the Online Computer Library Center’s (OCLC) Direct Request service that made it easier for users to initiate their requests (Burk, 2006). According to Burk, “The request form asks the user to supply patron information but not bibliographic information, which is automatically provided by the database. This not only simplifies the request process for users, but also ensures the submission of accurate citation information to the interlibrary loan office.” (Burk, 2006, p. 76) In addition to OCLC, other vendors such as interlibrary loan management software packages (CLIO and ILLiad) as well as federated search products (SFX and Serials Solutions) started to provide citation and user information directly to library request forms making it easier for users to request materials (Burk, 2006).

2.2 Offsite or Remote Storage Requests and Document Delivery

In addition to interlibrary loan requests, many academic libraries house a percentage of their collections in offsite storage facilities (also known as remote storage). Academic libraries may also allow certain users, such as faculty and graduate students, to request items that are located on the shelves. Atkins, Greenwood, and Whaley (2014) define these types of requests for onsite and offsite material from a library’s collection as campus document delivery. In order for users to access these materials, libraries have implemented systems where users place requests for items held in their library’s

collection no matter if these are located onsite or offsite. Haslam et al. (2002) describe how the Lied Library at the University of Nevada, Las Vegas implemented an automated storage and retrieval system (ASRS) which required “. . . designing a user-interface between the integrated online library system and the ASRS . . .” (Haslam, Lee Kwon, Pearson Marilyn, & White, 2002, p. 71). Additionally, Lied Library also wanted to implement a shopping cart feature into the interface that would allow users to request multiple items at once. However, compromises had to be made during development and they were not able to build the shopping cart feature (Haslam et al., 2002).

Kruger (2003) details ways to improve access to materials located in offsite storage by focusing on three areas: “. . . (1) user-focused access policies; (2) enhanced OPAC displays; and (3) new technologies for retrieval and delivery” (Kruger, 2003, p. 45). During the late 1990s and early 2000s, user expectations of libraries began to change as users started to prefer online tools that encompassed self-service. According to Kruger, “Users should be able to initiate their own requests for materials online directly from the OPAC, even for requests at the journal article level.” (Kruger, 2003, p. 50)

At the Z. Smith Reynolds Library at Wake Forest University, Mitchell and Yu (2007) describe how they simplified the request process for their users by combining various types of requests into a single system and integrating workflows between the circulation and interlibrary loan departments to gain efficiencies with fulfilling requests (Mitchell & Yu, 2007). Mitchell and Yu explain their decision to develop a single request system by noting the following, “Based on the idea that patrons should not have to make explicit decisions about where they want a document from but rather just that they want

it, we decided to combine interlibrary loan and document delivery functions into a single interface that would be available to eligible patrons.” (Mitchell & Yu, 2007, p. 337)

2.3 Archival Material Requests

While the literature provides information about request processes moving online for interlibrary loan, offsite or remote library storage, and document delivery, there is little information about requesting archival material via online interfaces. Even though libraries may digitize some archival material and create online finding aids for this material, McCausland (2011) notes that many researchers still need to access archival material in its original format. In addition, many teachers and librarians are working to bring the use of primary sources into the classroom (Dupont & Yakel, 2013; Samuelson & Coker, 2014). Because students and researchers need to access primary sources, they would presumably have to request these materials in order to view them.

Walton (2015) conducted a usability study about online finding aid navigation in an academic archive. Task 10 in this study asked participants to find a specific box number and folder number as well as how they found these numbers in an academic archive collection described in an online finding aid. The last question in this task asked participants, “If you were a researcher who wanted to view these items, how would you request access to this box or folder?” (Walton, 2015, p. 66) While Walton provides measurements for average time on task, task completion rate, and mouse click efficiency; she does not provide data on how users requested access or if they had trouble requesting access to the box or folder. Even though this study focused on a broader range of navigational features of online finding aids in academic archives, 40% of the 10

participants did not complete Task 10 with ease and also had a greater number of mouse clicks from the optimal number (Walton, 2015, p. 34-36).

2.4 Usability Research of Request Functionality on Library Websites

Even though the literature provides evidence of academic libraries implementing online request functionality for users, there is a dearth of information regarding user interfaces used for requesting materials or usability studies testing online request functionality in academic libraries. However, between October 2002 and February 2004, the National Library of New Zealand piloted two different interfaces (different versions of a system named Te Puna) for what they term “end-user requesting” (Reid, Bowden, & McCartin, 2005). The first pilot project, named D-I-Y Interloans, was conducted from October 2002 to January 2003 at Lincoln University. While the second pilot project, named Rapid Request, was conducted from October 2003 to February 2004 at Landcare Research Ltd. After piloting these different system versions and interfaces, part of the project evaluation consisted of end-user surveys that asked users about ease of use, whether request instructions were easy to follow, what they liked and disliked, and suggested improvements. Both groups had similar likes (time savings, overall ease of use, creating requests at any time, removing possibility for error, electronic delivery) and dislikes (complex interfaces and login, entering request data, unclear instructions). The groups also made the following recommendations for improving the interfaces:

- . . . form design, including library specific forms and making buttons more obvious;
- entry point for, and retention of, personal details;
- better instructions;
- ability to create multiple requests and search without logging in; and
- a mechanism for confirming request status. (Reid et al., 2005, p. 657)

Another study conducted by Rabina and Peet (2014) at the New York Public Library (NYPL) focused on testing the usability of accessing material in remote storage. The goal of the study was to figure out if NYPL was meeting user needs in regards to access and storage by conducting usability tests on e-book borrowing and offsite material requests. According to Rabina and Peet, “Much of the problem lies in the lack of documentation about actual user experiences with borrowing from offsite storage; perceptions are largely negative, and there is very little research available to counter them.” (Rabina & Peet, 2014, p. 54) Overall, participants found the task for requesting offsite material to be fairly easy and the interface to be clear. However, participants did provide the following suggestions for improving the interface and user experience: ability to track requests and adding a shopping cart feature so that multiple items can be requested at one time (Rabina & Peet, 2014). While this study was completed at a public library instead of an academic library, this is the only study the author found to be similar in regards to usability testing of request functionality, specifically of remote storage requests.

2.5 Request Functionality via Duke University Libraries’ Website

Given the expectations of users in a world where books can be ordered online and delivered instantly (e-books) or the next day (print books), Duke University Libraries (DUL) aims to improve the user experience of requesting materials on their website. DUL will be implementing a new integrated library system (ILS) at the end of 2015 which has enabled them to focus on making improvements to request functionality on their website at the same time.

According to Rodgers, Sharp, and Preece (2013), "The process of interaction design involves four basic activities: establishing requirements, designing alternatives, prototyping, and evaluating." (Rodgers, Sharp, & Preece, 2013, p. 15) In order to establish requirements, Duke University Libraries formed an internal team to discuss current challenges of their request functionality and they have conducted an unpublished usability study to test request functionality on their current website. Whereas the unpublished study focused on requesting books, requesting archival material, and using the My Library Account page via Duke's current library website, the study reported on in this Master's paper examines Duke Libraries' internal request system for items held at their local libraries and offsite materials storage (Duke's Library Service Center) via new as well as revised user interfaces. Given the request functionality requirements formulated by Duke Libraries, design alternatives have been considered and interface prototypes have been developed which will be evaluated by this usability study. The results from this study will determine if further user interface changes are needed to make Duke University Libraries' website easier and more intuitive for users requesting materials from DUL's local libraries or their Library Service Center.

3 Methodology

3.1 Overview

The goal of this usability study is to assess the functionality and ease of use for new and revised user interface designs that will be used to request items from Duke University Libraries using the library's website. In order to test these interfaces, web page mock-ups were created to simulate as much of the functionality that will be available during the full implementation of the interface designs. In addition, testing the interfaces before deployment allows for changes to be made to enhance the user experience.

3.2 Participants

This study was conducted at the University of North Carolina at Chapel Hill (UNC-CH) and participants were recruited from UNC-CH for convenience. Twelve participants were recruited on a first come first serve basis via UNC-CH's informational listserv (see Appendix A for recruitment email). By recruiting participants from UNC-CH, an assumption was made that most participants would probably have little experience using Duke University Libraries' website. Since the main users of Duke University Libraries' website are students, faculty, and staff, participants in this study had to meet this criteria so that the sample consisted of a similar user population to that at Duke. Thus, participants had to meet the following eligibility requirements:

- must be 18 years of age or older,
- must be a student, faculty, or staff member of UNC-Chapel Hill, and

- must not have a Duke University NetID account, a Duke University Library Card account, OR a Duke Card.

Prior to beginning each usability test, participants were asked to complete a demographic questionnaire (see Appendix B for demographic questions). Participants came from a range of departments across UNC-CH and Figure 1 displays the affiliation of all 12 participants.

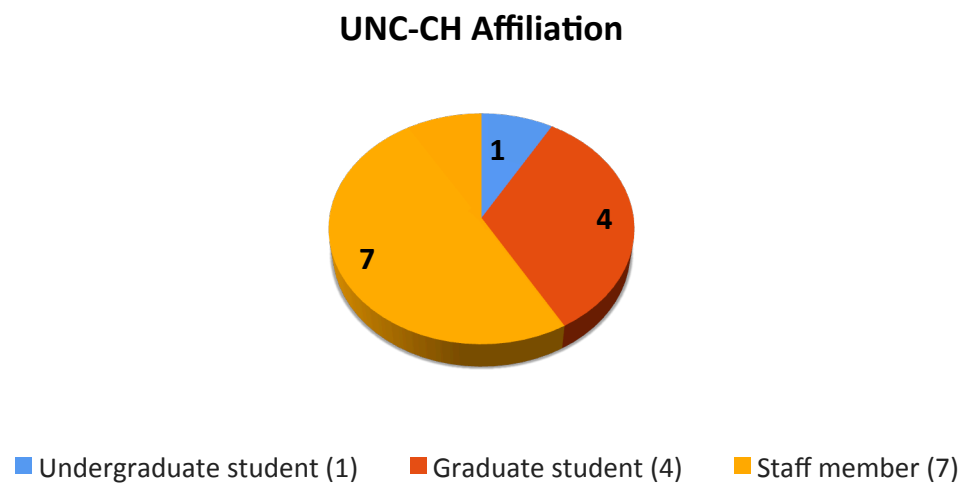


Figure 1. Participants' affiliation with UNC-Chapel Hill.

3.3 Usability Test and Questionnaires

Usability tests involve asking participants to perform tasks using a product or system and evaluating how the tasks were performed in order to inform future design decisions for that product or system (Rubin & Chisnell, 2008; Ward & Hiller 2005). After completing the demographic questionnaire, participants were then asked to complete three tasks using the web page mock-ups. These mock-ups were actual web pages that mimicked as much functionality as possible that would be available in a live website. Participants

could click on most links in these web page mock-ups and interact in mostly the same way that they would if using a live website. However, logins and passwords were not enabled, so users had to verbally describe how they would login if they reached a place where this was necessary. Also, participants were not asked to search for items using the library card catalog. Each task started at the catalog result screen. The tasks tested the following:

1. single item request via Library Card account;
2. single item request (copies available in multiple locations, including archives) via Duke NetID account;
3. request multiple items at once via Duke NetID account.

Participants were asked to think aloud while they completed each task. Jakob Nielsen (2012) defines the think aloud method as: “In a thinking aloud test, you ask test participants to use the system while continuously thinking out loud — that is, simply verbalizing their thoughts as they move through the user interface.” (Nielsen, 2012, para 3) Rather than ask participants questions during the task portion of this test, points where participants hesitated or expressed confusion were noted and were asked about in the post-test interview. By following this method, participants’ cognitive processes will not be disrupted (Oh & Wildemuth, 2009, p. 180). When participants asked questions while completing the tasks, the author followed the “boomerang” method described by Pernice (2014) by asking the participant to answer their own question, for example: “What do you think?” and “What would you do if you were really doing this on your own?” (Pernice, 2014, para 4). In addition, screen-recording software (Camtasia) was used to

record the screen interactions and audio of each participant while they were completing the tasks as well as during the post-test interview.

After each task, participants completed post-task questions that focused on confidence of completing each task, satisfaction with the ease of the task and length of time to complete task, and the clarity of the request status. At the end of the usability test, participants were asked to complete post-test questions about their overall experience completing each task using the interfaces. Finally, participants completed a post-test interview where the author asked qualitative questions about the interfaces used to complete the tasks. The author also asked follow-up questions noted while observing participants complete each task (see Appendix B for the post-task, post-test, and interview questions).

The test was conducted in the UNC-CH School of Information and Library Science usability lab and took participants approximately 30 minutes to complete. When participants arrived, they were greeted, given a brief introduction to the study, and were then given time to complete the consent form (see Appendix C for the consent form). After completing the demographic questionnaire (paper print out that participants filled out), the screen-recording software was set to record and the task portion of the test began. Before participants started each task, the author directed each participant to the web page mock-up to use, handed the participant a print out of the task, and finally read the task aloud to the participant. Each participant received all three tasks in the same order (i.e., Task 1 first, Task 2 second, and Task 3 third). After the participant completed each task by verbally saying they were finished, the author handed a paper print out of post-task questions to the participant to fill out before starting the next task.

After each participant finished all three tasks, the author handed a paper print out of post-test questions to the participant to fill out. Following the post-test questions, the author verbally asked each participant post-test interview questions and followed up on any notes made during the task portion of the study. Upon completion of the entire test, each participant received compensation of \$10.00 cash. A \$120 Carnegie Grant from the UNC-CH School of Information and Library Science provided funding for participant compensation. After signing a receipt of compensation, the moderator thanked each participant and answered any remaining questions. For the complete observation script, see Appendix D.

3.4 Evaluation Measures

According to Nielsen (2012), performance and satisfaction metrics are strongly correlated. Thus, Nielsen recommends using both of these measures when conducting quantitative usability tests (Nielsen, 2012). Performance metrics used for this study include: success rate (binary), time on task, error rate, and participants' subjective satisfaction (Nielsen, 2001; Tullis & Albert, 2013). Participants comments made during task completion and the post-test interview were also analyzed by noting points of confusion and common themes.

4 Results

4.1 Participant Prior Experience

Since it was assumed that participants from UNC-Chapel Hill had little experience using Duke University Libraries' website, the following chart in Figure 2 shows how many participants had ever used Duke Libraries' website.

Have you ever used Duke University Libraries' website?

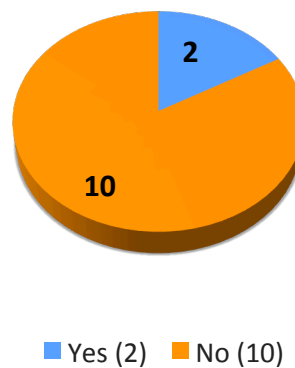


Figure 2. Number of participants who have used or not used Duke University Libraries' website.

For the two participants who answered “Yes” to having used Duke University Libraries' website, one participant used the site to find contact information while the other participant used the site to find out if an item was being held. Since the majority of participants had never used Duke Libraries' website, this study aimed to gain knowledge of how a novice user of this site would accomplish the tasks being tested.

In addition, participants also answered questions about their experience with using UNC-Chapel Hill Libraries' website. These questions provided information about participants' experience with using an academic library website (Figure 3) as well as requesting materials for instance from interlibrary loan or from UNC-CH's special collections (Figure 4).

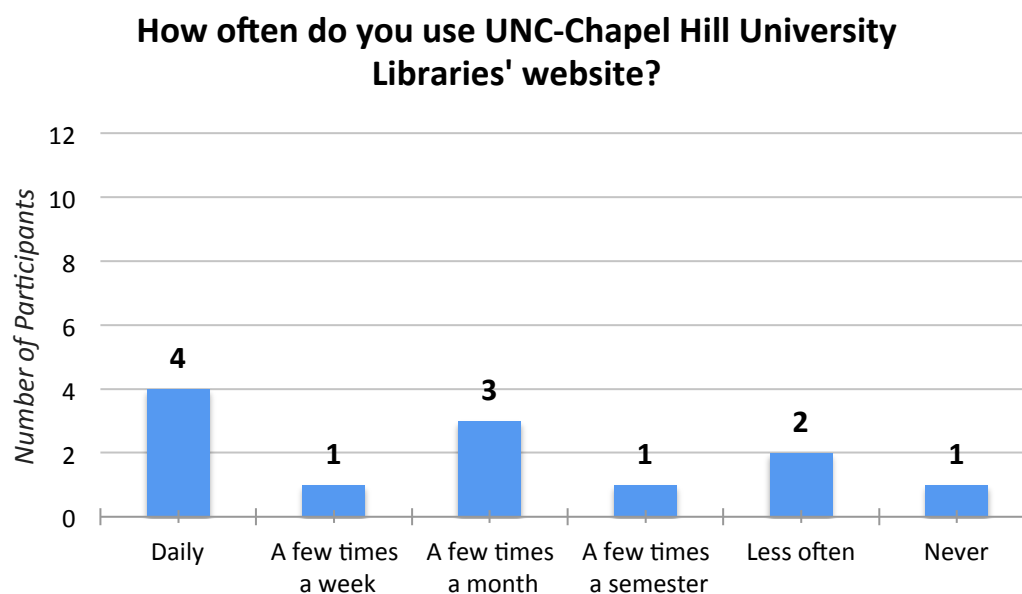


Figure 3. Frequency of how often participants use UNC-Chapel Hill University Libraries' website.

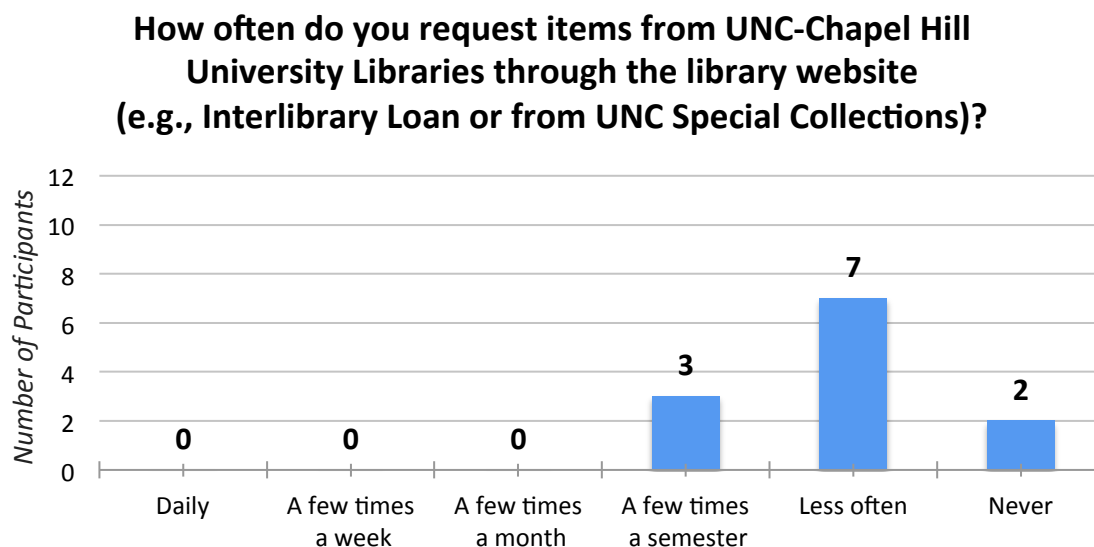


Figure 4. Frequency of how often participants request items from UNC-Chapel Hill University Libraries' website.

Only one participant had never used UNC-CH Libraries' website suggesting that overall, most participants were at least familiar with the website if not very familiar (for those that use the website daily or weekly). As for requesting materials through UNC-CH Libraries' website, few participants complete request tasks on a regular basis. This suggests that participants would not be very familiar with the request tasks in this study and would be able to lend a novice perspective on the interfaces being tested.

4.2 Task 1: Single Item Request via Library Card Account

Task 1 started at this URL, <http://people.duke.edu/~tcrich/mockup/potter/catalog-screen.html> (see Figure 5).

The screenshot shows the Duke University Libraries website. The header includes the Duke University Libraries logo, navigation links (Search & Find, Using the Library, Research Support, Course Support, Libraries, About), and a search bar. The main content area displays the book 'Harry Potter and the half-blood prince' by J.K. Rowling. The book details include the author, format (Book), publisher (New York: Arthur A. Levine Books, c2005), language (English), and a summary. A 'Request' button is visible. Below the book details is a table showing the location of the book in the Perkins/Bostock Library stacks, with columns for Location, Details, Subjects, and Summary. The table lists five copies of the book, all of which are available. The footer contains contact information, services for various groups (Faculty & Instructors, Alumni, Graduate Students, Donors, Undergraduate Students, Visitors, International Students, Patrons with Disabilities), social media links, and the Duke University logo.

Location	Details	Subjects	Summary
Duke			
Perkins/Bostock Library	Stacks Click for map	PR6068.O93 H376 2005 c.1	Available.
Perkins/Bostock Library	Stacks Click for map	PR6068.O93 H376 2005 c.2	Lost/Missing.
Perkins/Bostock Library	Stacks Click for map	PR6068.O93 H376 2005 c.3	Available.
Perkins/Bostock Library	Stacks Click for map	PR6068.O93 H376 2005 c.4	Available.
Perkins/Bostock Library	Stacks Click for map	PR6068.O93 H376 2005 c.5	Available.

Figure 5. Interface that participants started from for Task 1.

After directing participants to the starting interface, a print out of the following task was presented to participants and was also read aloud to them:

“For this task, imagine that your only affiliation with Duke University is that you have a Duke Library Card. You would like to read the book, **Harry Potter and the Half-Blood Prince**.

- Show me the steps you would take to request this book given that your only affiliation with Duke University is that you have a Duke Library Card.”

The optimal path for this task is presented in Figure 6 and screenshots of each step in this path are listed in Figures 7–12. Also, participants could not actually enter logins and passwords. This was explained to participants beforehand, so they could verbally describe how they would enter a login and password at a point where they needed to do so or simply click the “Submit” or “Enter” button when they reached a login screen.

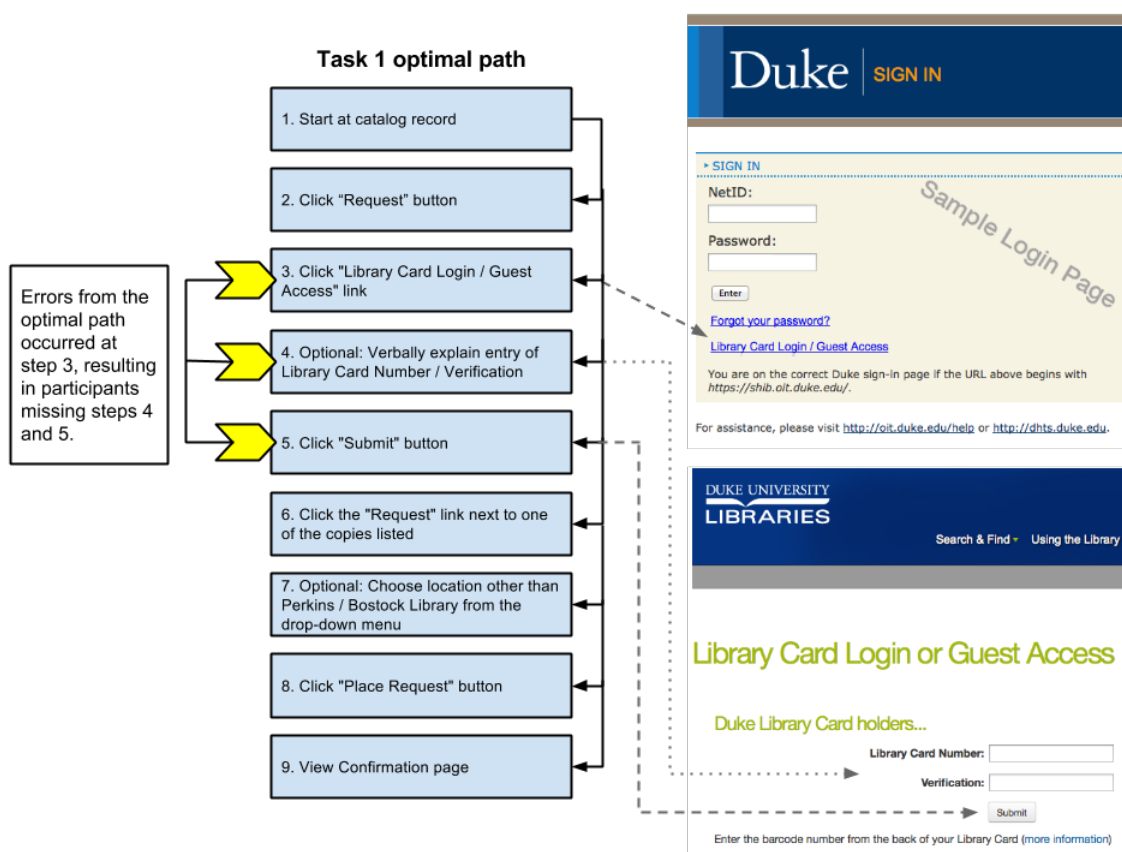


Figure 6. Task 1 optimal path and steps where errors occurred.

[My Accounts](#)
[Ask a Librarian](#)

[Search & Find](#)
[Using the Library](#)
[Research Support](#)
[Course Support](#)
[Libraries](#)
[About](#)

[Home](#)
[Search & Find](#)
[Books & Media \(Catalog\)](#)

0 marked items

[Start Over](#)

[<< Back to Search Results](#)

Harry Potter and the half-blood prince

by J.K. Rowling ; illustrations by Mary GrandPré.

Author: [Rowling, J. K.](#)

Format: **Book**

Published: New York : Arthur A. Levine Books, c2005.

Language: English

Summary: As the Harry Potter sequence draws to a close, Harry's most dangerous adventure yet is just beginning . . . and it starts July 16, 2005. We could tell you, but then we'd have to Oblivate your memory.<... [\(see more\)](#)

[Email](#)
[Print](#)
[Text Message](#)
[Refworks](#)
[Endnote \(file\)](#)

Not on the shelves?
[Request Missing](#)
[Book](#)

[Location](#)
[Details](#)
[Subjects](#)
[Summary](#)

Duke

Perkins/Bostock Library	Stacks Click for map	PR6068.O93 H376 2005 c.1	Available.
Perkins/Bostock Library	Stacks Click for map	PR6068.O93 H376 2005 c.2	Lost/Missing.
Perkins/Bostock Library	Stacks Click for map	PR6068.O93 H376 2005 c.3	Available.
Perkins/Bostock Library	Stacks Click for map	PR6068.O93 H376 2005 c.4	Available.
Perkins/Bostock Library	Stacks Click for map	PR6068.O93 H376 2005 c.5	Available.

Contact Us
411 Chapel Drive
Durham, NC 27708
(919) 660-5870
Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

Figure 7. Task 1, screenshot for steps 1 (Start at catalog record) and 2 (Click “Request” button).

Duke | **SIGN IN**

► **SIGN IN**

NetID:

Password:

[Forgot your password?](#)

[Library Card Login / Guest Access](#)

You are on the correct Duke sign-in page if the URL above begins with <https://shib.oit.duke.edu/>.

For assistance, please visit <http://oit.duke.edu/help> or <http://dhts.duke.edu>.

Figure 8. Task 1, screenshot for step 3 (Click “Library Card Login / Guest Access” link).

DUKE UNIVERSITY LIBRARIES

My Accounts Ask a Librarian Search articles, books,

Search & Find Using the Library Research Support Course Support Libraries About

Library Card Login or Guest Access

Duke Library Card holders...

Library Card Number:
 Verification:

Enter the barcode number from the back of your Library Card
[\(more information\)](#)

Guest Access

Don't have a NetID or Library Card but want to request materials from the Library Service Center (LSC)? [Use our LSC Guest Request Form](#)

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 860-5870
 Perkins Library Service Desk

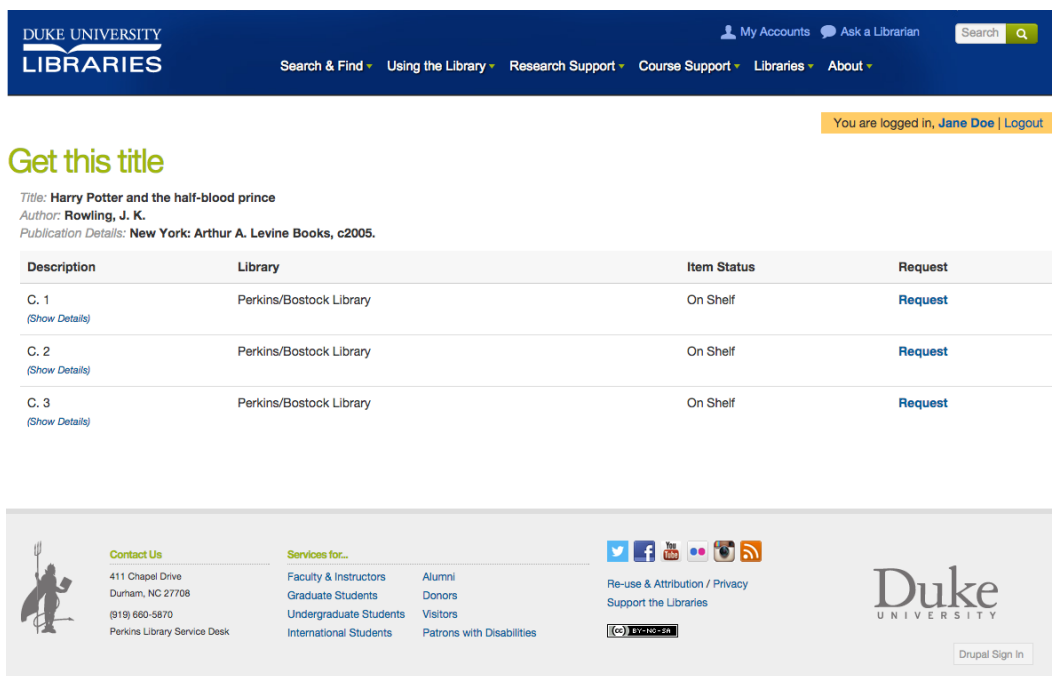
Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

Re-use & Attribution / Privacy
 Support the Libraries

Duke
UNIVERSITY

Figure 9. Task 1, screenshot for steps 4 (Optional: Verbally explain entry of Library Card Number / Verification) and 5 (Click “Submit” button).



DUKE UNIVERSITY LIBRARIES

Search & Find ▾ Using the Library ▾ Research Support ▾ Course Support ▾ Libraries ▾ About ▾

You are logged in, [Jane Doe](#) | [Logout](#)

Get this title

Title: **Harry Potter and the half-blood prince**
 Author: **Rowling, J. K.**
 Publication Details: **New York: Arthur A. Levine Books, c2005.**

Description	Library	Item Status	Request
C. 1 (Show Details)	Perkins/Bostock Library	On Shelf	Request
C. 2 (Show Details)	Perkins/Bostock Library	On Shelf	Request
C. 3 (Show Details)	Perkins/Bostock Library	On Shelf	Request

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

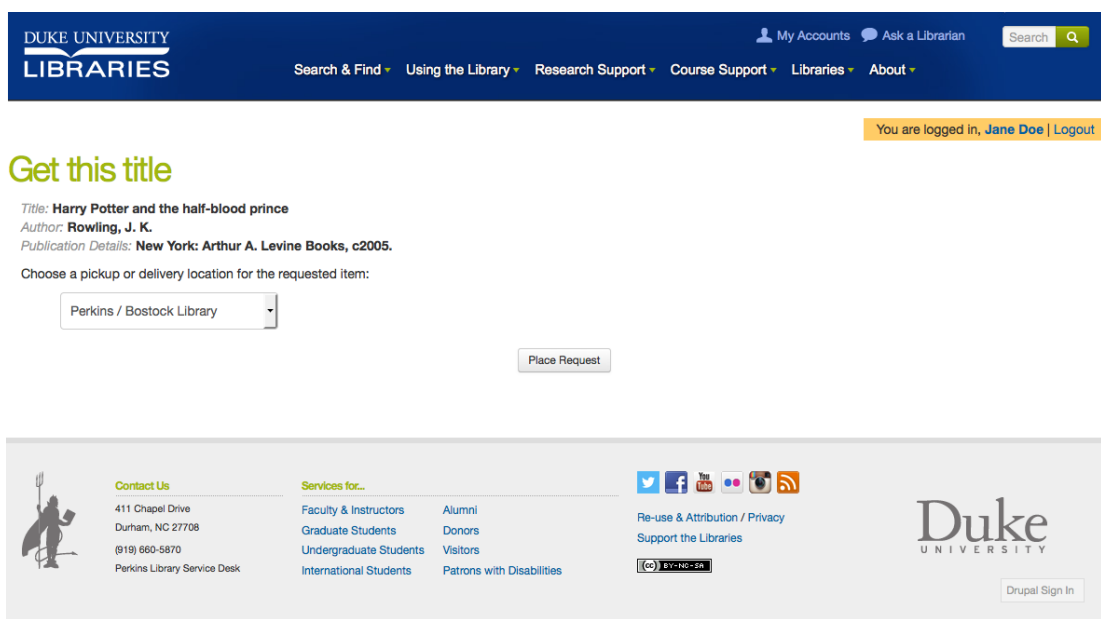
[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

[BY-NC-SA](#)

Duke UNIVERSITY

[Drupal Sign In](#)

Figure 10. Task 1, screenshot for step 6 (Click the “Request” link next to one of the copies listed).



DUKE UNIVERSITY LIBRARIES

Search & Find ▾ Using the Library ▾ Research Support ▾ Course Support ▾ Libraries ▾ About ▾

You are logged in, [Jane Doe](#) | [Logout](#)

Get this title

Title: **Harry Potter and the half-blood prince**
 Author: **Rowling, J. K.**
 Publication Details: **New York: Arthur A. Levine Books, c2005.**

Choose a pickup or delivery location for the requested item:

Perkins / Bostock Library

[Place Request](#)

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

[BY-NC-SA](#)

Duke UNIVERSITY

[Drupal Sign In](#)

Figure 11. Task 1, screenshot for steps 7 (Optional: Choose location other than Perkins / Bostock Library from the drop-down menu) and 8 (Click “Place Request” button).

DUKE UNIVERSITY LIBRARIES

Search & Find ▾ Using the Library ▾ Research Support ▾ Course Support ▾ Libraries ▾ About ▾

My Accounts Ask a Librarian Search

You are logged in, **Jane Doe** | Logout

Confirmation

Title: **Harry Potter and the half-blood prince**
 Author: **Rowling, J. K.**
 Publication Details: **New York: Arthur A. Levine Books, c2005.**

Your request has been received. Your item will be delivered to the requested location in one to two business days.

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

Re-use & Attribution / Privacy
 Support the Libraries

Drupal Sign In

Figure 12. Task 1, screenshot for step 9 (View Confirmation page).

This task tested a new interface that users who only have library cards must use to log into their Duke library account. Most users who log into their Duke library account have what is called a Duke NetID account. Duke's Office of Information Technology (OIT) has a standard Duke NetID login interface and OIT prefers that this interface be used whenever the NetID login is required. In order to comply with this standard, Duke University Libraries is changing their current login interface in Figure 13 to that of OIT's interface design in Figure 14. However, OIT's design does not include a login for Duke Library Card accounts or guest access to the library. Thus, OIT's interface had to be revised to include a way for Duke library cardholders to access their library account and for guests to request access to materials. To accomplish this requirement, a link to "Library Account / Guest Access" was added to OIT's interface in Figure 14. Once users click the "Library Account / Guest Access" link, they are directed to a new interface in Figure 15 to choose the method they need: library card login or guest access.

The screenshot shows the top navigation bar of the Duke University Libraries website. It includes the logo, a search bar, and links for My Accounts, Ask a Librarian, Search & Find, Using the Library, Research Support, Course Support, Libraries, and About. Below the navigation bar is a section titled "Duke University Libraries Account Login". It features two input fields: "NetID OR Library Card Number:" and "NetID Password OR Library Card Verification:", followed by a "Submit" button. A light blue box below the login fields contains the text: "Don't have a NetID or Library Card but want to request materials from the Library Service Center (LSC)? Use our [LSC Guest Request Form](#)". At the bottom, there is a footer section with contact information, services for various groups (Faculty & Instructors, Alumni, Graduate Students, Donors, Undergraduate Students, Visitors, International Students, Patrons with Disabilities), social media links, and the Duke University logo.

Figure 13. Current interface for Duke University Libraries Account Login (either Duke NetID or Library Card account login, including a link to Guest Request Form).

The screenshot shows the revised login interface. It features a dark blue header with the Duke University logo and a "SIGN IN" button. Below the header is a light yellow box containing the login form. The form has two input fields: "NetID:" and "Password:", followed by an "Enter" button. Below the login fields are two links: "Forgot your password?" and "Library Card Login / Guest Access". At the bottom of the yellow box, there is a note: "You are on the correct Duke sign-in page if the URL above begins with <https://shib.oit.duke.edu/>." Below the yellow box, there is a footer section with the text: "For assistance, please visit <http://oit.duke.edu/help> or <http://dhts.duke.edu>."

Figure 14. Revised interface for Duke University Libraries Account Login (Duke NetID login listed first followed by a link further down named "Library Card / Guest Access").

The screenshot shows the Duke University Libraries website. At the top is a dark blue header with the Duke University Libraries logo on the left, navigation links (Search & Find, Using the Library, Research Support, Course Support, Libraries, About) in the center, and user links (My Accounts, Ask a Librarian) and a search bar on the right. Below the header, the main content area is titled "Library Card Login or Guest Access" in green. It is divided into two sections: "Duke Library Card holders..." and "Guest Access". The "Duke Library Card holders..." section has input fields for "Library Card Number:" and "Verification:", a "Submit" button, and a note to "Enter the barcode number from the back of your Library Card" with a link for more information. The "Guest Access" section has a note for users without a NetID or Library Card, with a link to "Use our LSC Guest Request Form". At the bottom, there is a footer with contact information, services for various groups (Faculty, Alumni, Donors, etc.), social media icons, and the Duke University logo.

Figure 15. New interface for Duke University Libraries, Library Card Login or Guest Access. Once users click the “Library Card Login / Guest Access” link in Figure 14, this is the page that will appear next.

In addition to the revised and new interfaces for logging into an account at Duke Libraries, other interface revisions were also incorporated into pages where users make requests (also referred to as “Get this title” interfaces). The main changes that were made simplified these interfaces by removing unnecessary text, links, and data entry. See Appendix E to view the current and revised “Get this title” interfaces.

4.2.1 Task 1 Completion Summary

Task 1 Successfully Completed	Number of Participants
Yes	9*
No	3

Table 1. Number of participants who did or did not successfully complete Task 1. *3 of these 9 participants expressed difficulty finding the “Library Card / Guest Access” link while completing this task, but ended up completing the task successfully.

First, participants had to navigate to the correct link on the new login screen shown in Figure 14. Nine out of the 12 participants successfully completed this task. However, three out of the nine who were successful mentioned having difficulty finding the “Library Card / Guest Access” link on the Duke Sign In page in Figure 14. In the post-test interview, two additional participants who successfully completed this task also mentioned having trouble finding the “Library Card / Guest Access” link on the Duke Sign In page. The three participants who did not successfully complete this task used the NetID login instead of clicking the “Library Card / Guest Access” link (see Figure 6 above, Task 1 optimal path diagram).

It is important to note that in a live implementation of these website interfaces, the three participants who did not complete this task successfully would have received an error message when they attempted to use the NetID login. While the web page mock-ups were made to simulate as much of the functionality of a how the actual interface will work, this is one area where the usability test could have been improved. The participants did not know that they were using the incorrect login because they did not receive an error message. If they had received an error message, then these participants may have figured out the correct path to completing this task. As discussed in the Methodology section, the author did not want to interrupt participants to let them know they were going down the wrong path. Thus, the author followed the technique of remaining fairly quiet unless the participants had questions during the task portion of this study.

Second, once users found the correct login page, they had to show how they would login using a Library Card account via a new interface (see Figure 15). All participants who successfully navigated to this page, did not have any trouble figuring out

where to enter login credentials. Two participants did mention that they were not sure what the term “Verification” meant, but they assumed that it would be on the library card.

Even though five out of the nine participants who successfully completed this task mentioned having difficulty finding the “Library Card / Guest Access” link on the Duke Sign In page in Figure 14, one participant did find the links on this page to be helpful. In the post-test interview, this participant noted that the links under the NetID login were helpful if you don’t have a NetID.

4.2.2 Task 1 Quantitative Questions

After each task was completed, participants answered the following post-task questions.

The answers to each question are presented in Figures 16–19.

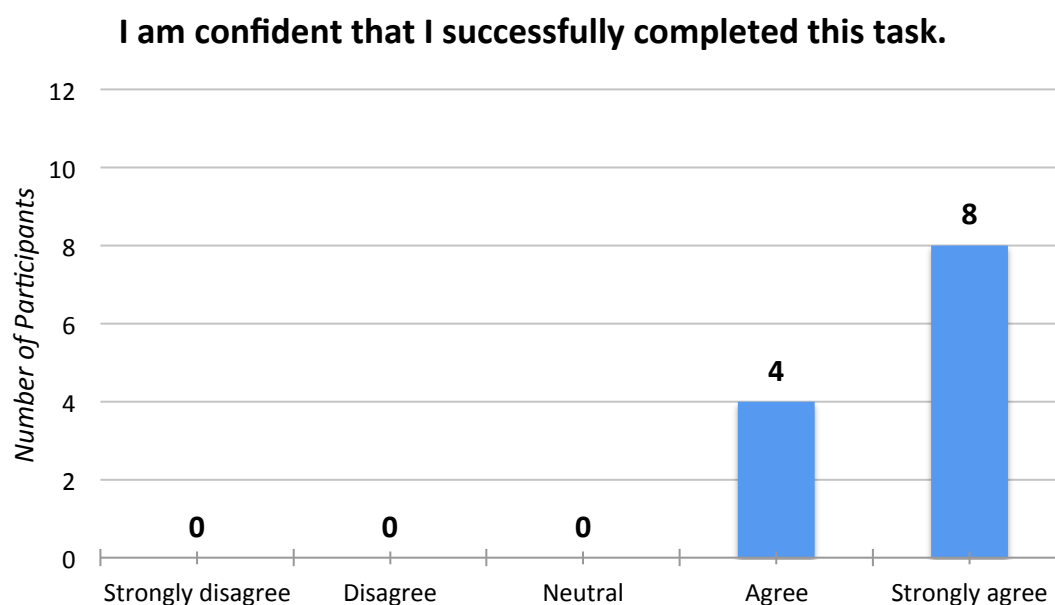


Figure 16. Participant confidence in successfully completing Task 1.

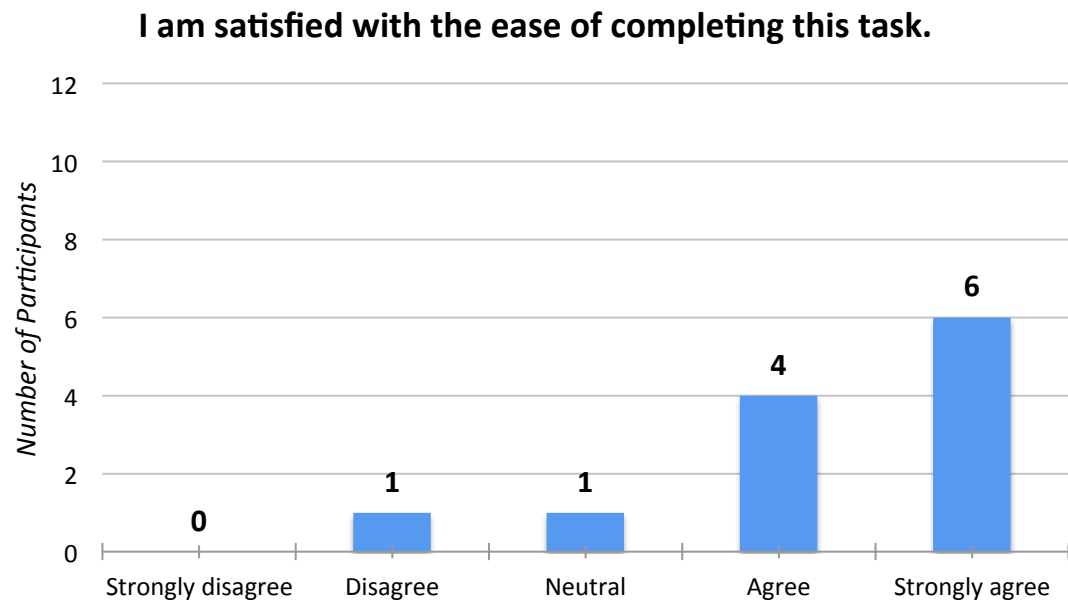


Figure 17. Participant satisfaction with the ease of completing Task 1.

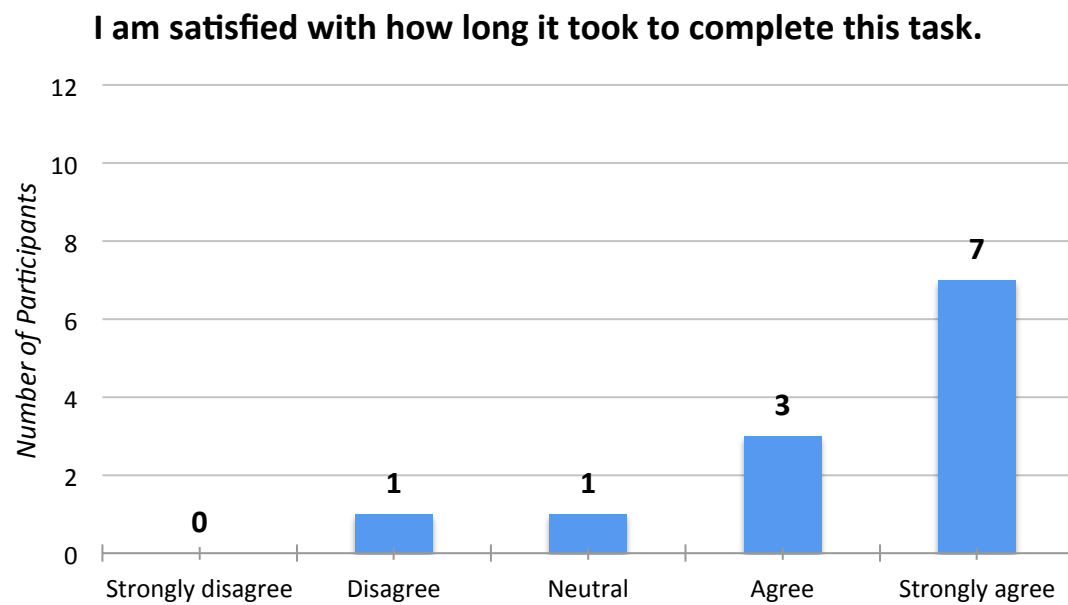


Figure 18. Participant satisfaction with how long it took to complete Task 1.

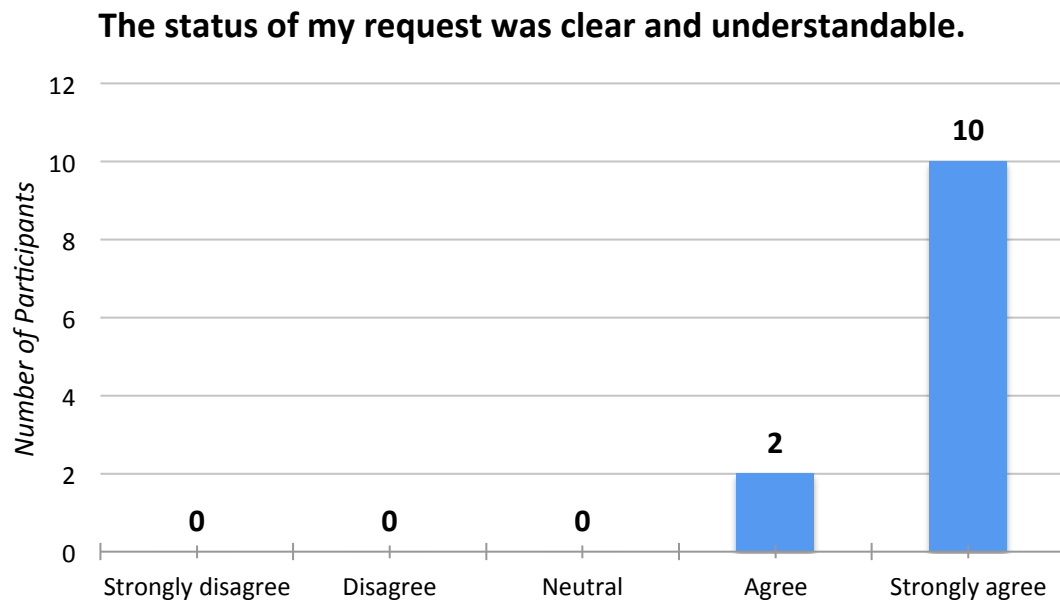


Figure 19. Participant satisfaction with the clarity of the request status in Task 1.

For participant confidence in completing Task 1, all participants answered either “Strongly agree” or “Agree”. However, the participants who did not complete the task successfully did so because they did not click on the correct login link. If the interface mock-ups had included an error message for clicking on the incorrect login link, then the answers to this question about confidence might be different.

For the ease of and length of completing this task most participants answered, “Strongly agree” or “Agree”. However, five participants mentioned having difficulty finding the “Library Card / Guest Access” link in Figure 14. This suggests that perhaps participants were satisfied with the overall ease and length of the entire task with the exception of finding the “Library Card / Guest Access” link. Finally, all participants were satisfied with the clarity of the request status for Task 1.

4.3 Task 2: Single Item Request via Duke NetID Account (copies available in multiple locations including archives)

Task 2 started at this URL, <http://people.duke.edu/~tcrich/mockup/mixed-location/catalog-screen.html> (see Figure 20).

The screenshot displays the Duke University Libraries website. The header includes the library logo, navigation links (Search & Find, Using the Library, Research Support, Course Support, Libraries, About), and a search bar. The main content area shows the book 'Too Rich: The Family Secrets of Doris Duke' by Pony Duke and Jason Thomas. The book's details, including author, format, and summary, are listed. A table below shows the book's availability in different locations: Perkins/Bostock Library and University Archives. The Perkins/Bostock Library entry shows the book is available, while the University Archives entry shows it is available for library use only and a request can be placed. The footer contains contact information, services for various groups, and social media links.

Location	Details	Subjects	Summary
Duke			
Perkins/Bostock Library	Stacks Click for map	CT275.D8769 D85 1996 c.1	Available
University Archives	Click for map	973.9092 D877, T668, 1996 c.1	Available (Library Use Only) - Place Request

Figure 20. Interface that participants started from for Task 2.

After directing participants to the starting interface, a print out of the following task was presented to participants and was also read aloud to them:

“Now, I’d like you to imagine that you are a Duke student and you have a Duke NetID and Password. You are completing research for a project about Doris Duke and you need to access the book, **Too Rich: The Family Secrets of Doris Duke**.

- Show me how you would request the physical hard copy of this book from the **Perkins/Bostock Library** and have it delivered to **Lilly Library**.”

The optimal path for this task is presented in Figure 21 and screenshots of each step in this path are listed in Figures 22–27. Again, participants could not actually enter logins and passwords, so they verbally explained how they would do this if needed or simply clicked the “Enter” button.

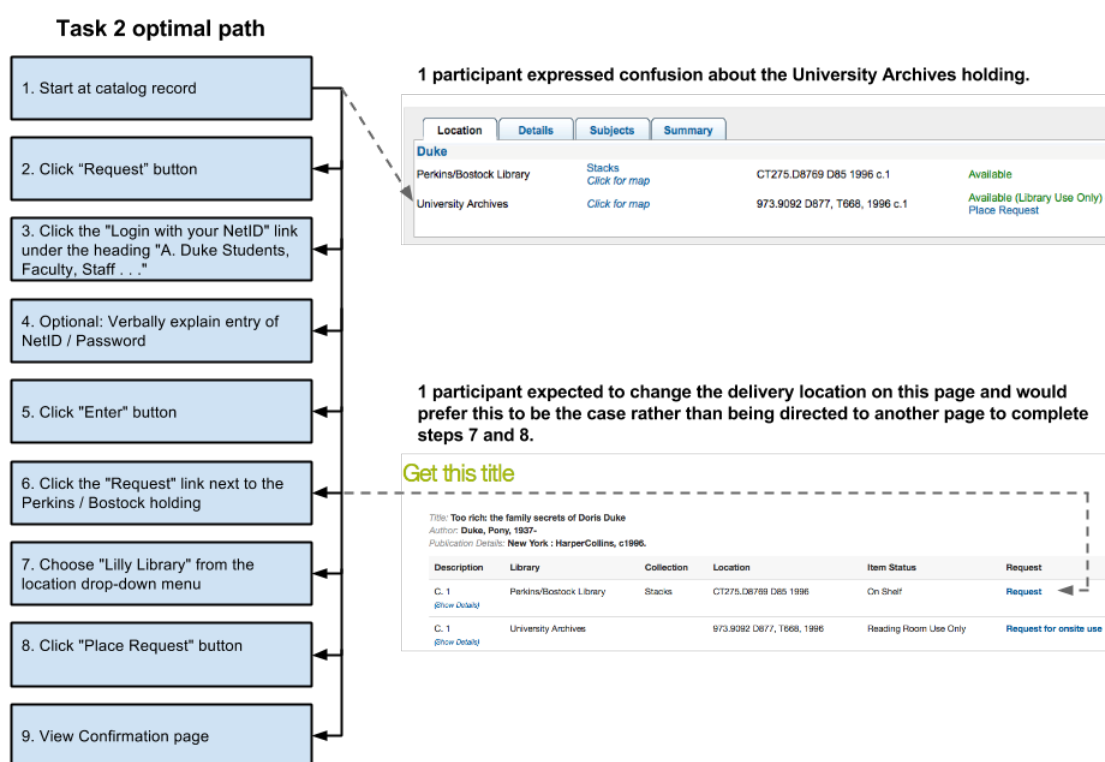


Figure 21. Task 2 optimal path and steps where participants expressed confusion.

DUKE UNIVERSITY LIBRARIES

My Accounts Ask a Librarian Search articles, books

Search & Find Using the Library Research Support Course Support Libraries About

Home Search & Find Books & Media (Catalog)

Search for words: Search 0 marked items

Too rich : the family secrets of Doris Duke

Pony Duke and Jason Thomas.

Author: Duke, Pony, 1937-

Format: Book; Manuscript

Published: New York : HarperCollins, c1996.

Language: English

Summary: One of the richest women in the world, Doris Duke lived life on her own terms. When she died in 1993, Duke left behind more than \$2 billion, most of it under the control of her butler, with instructions to keep her estate intact for her reincarnation. This sensational, illustrated biography offers the definitive account of Doris Duke's life and death. of photos. (see more)

Request

Email Print Text Message Refworks Endnote (file) Not on the shelves? Request Missing Book

Location	Details	Subjects	Summary
Duke			
Perkins/Bostock Library	Stacks Click for map	CT275.D8769 D85 1996 c.1	Available
University Archives	Click for map	973.9092 D877, T668, 1996 c.1	Available (Library Use Only) - Place Request

Contact Us

411 Chapel Drive
Durham, NC 27708
(919) 660-5870
Perkins Library Service Desk

Services for...

Faculty & Instructors Alumni
Graduate Students Donors
Undergraduate Students Visitors
International Students Patrons with Disabilities

Re-use & Attribution / Privacy
Support the Libraries

Duke UNIVERSITY

Figure 22. Task 2, screenshot for steps 1 (Start at catalog record) and 2 (Click “Request” button).

DUKE UNIVERSITY LIBRARIES

My Accounts Ask a Librarian Search

Search & Find Using the Library Research Support Course Support Libraries About

Choose a Request Method

A. Duke Students, Faculty, Staff...

[Login with your NetID](#)

B. Duke Library Card holders...

Don't have a Duke NetID?
[Login with your Library Card](#)

C. Request for use in Rubenstein Library

[Get this item for onsite use within the Rubenstein Library \(What does this mean?\)](#)

Don't have a NetID or Library Card but want to request materials from the Library Service Center (LSC)? [Use our LSC Guest Request Form](#)

Contact Us

411 Chapel Drive
Durham, NC 27708
(919) 660-5870
Perkins Library Service Desk

Services for...

Faculty & Instructors Alumni
Graduate Students Donors
Undergraduate Students Visitors
International Students Patrons with Disabilities

Re-use & Attribution / Privacy
Support the Libraries

Duke UNIVERSITY

Drupal Sign In

Figure 23. Task 2, screenshot for step 3 (Click the “Login with your NetID” link under the heading “A. Duke Students, Faculty, Staff . . .”).

Duke | SIGN IN

► SIGN IN

NetID:

Password:

Enter

[Forgot your password?](#)

[Library Card Login / Guest Access](#)

You are on the correct Duke sign-in page if the URL above begins with <https://shib.oit.duke.edu/>.

For assistance, please visit <http://oit.duke.edu/help> or <http://dhts.duke.edu>.

Figure 24. Task 2, screenshot for steps 4 (Optional: Verbally explain entry of NetID / Password) and 5 (Click “Enter” button).

DUKE UNIVERSITY LIBRARIES

My Accounts Ask a Librarian Search

Search & Find Using the Library Research Support Course Support Libraries About

You are logged in, Jane Doe | Logout

Get this title

Title: **Too rich: the family secrets of Doris Duke**
 Author: **Duke, Pony, 1937-**
 Publication Details: **New York : HarperCollins, c1996.**

Description	Library	Collection	Location	Item Status	Request
C. 1 (Show Details)	Perkins/Bostock Library	Stacks	CT275.D8769 D85 1996	On Shelf	Request
C. 1 (Show Details)	University Archives		973.9092 D877, T668, 1996	Reading Room Use Only	Request for onsite use

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

Re-use & Attribution / Privacy
 Support the Libraries

BY-NC-SA

Duke UNIVERSITY

Drupal Sign In

Figure 25. Task 2, screenshot for step 6 (Click the “Request” link next to the Perkins / Bostock Library holding).

DUKE UNIVERSITY LIBRARIES

Search & Find ▾ Using the Library ▾ Research Support ▾ Course Support ▾ Libraries ▾ About ▾

You are logged in, **Jane Doe** | Logout

Get this title

Title: **Too rich: the family secrets of Doris Duke**
 Author: **Duke, Pony, 1937-**
 Publication Details: **New York : HarperCollins, c1996.**

Choose a pickup or delivery location for the requested item:

Perkins / Bostock Library

Place Request

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

Re-use & Attribution / Privacy
 Support the Libraries

Drupal Sign In

Figure 26. Task 2, screenshot for steps 7 (Choose “Lilly Library” from the location drop-down menu) and 8 (Click “Place Request” button).

DUKE UNIVERSITY LIBRARIES

Search & Find ▾ Using the Library ▾ Research Support ▾ Course Support ▾ Libraries ▾ About ▾

You are logged in, **Jane Doe** | Logout

Confirmation

Title: **Too rich: the family secrets of Doris Duke**
 Author: **Duke, Pony, 1937-**
 Publication Details: **New York : HarperCollins, c1996.**

Your request has been received. Your item will be delivered to the requested location in one to two business days.

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities


Re-use & Attribution / Privacy
 Support the Libraries

Drupal Sign In

Figure 27. Task 2, screenshot for step 9 (View Confirmation page).

The main goal of Task 2 was to test a new interface that allows users to select a request method when items are held in Duke’s Rubenstein Library (archives) as well as another Duke library or the Library Service Center. The current interface is shown in

Figure 28 and the new interface is shown in Figure 29. When items are held in both of these locations, a user must choose to either log into their library account (via NetID or their Library Card account) or they must log into another account that is used to request archival material from Duke's Rubenstein Library. Again, the revised interfaces of pages used to make requests were also used in this task. See Appendix E to view the current and revised "Get this title" interfaces.



[My Accounts](#)
[Ask a Librarian](#)

[Search & Find](#)
[Using the Library](#)
[Research Support](#)
[Course Support](#)
[Libraries](#)
[About](#)

Duke University Libraries Account Login

You have a NetID or a Library Card Number

NetID OR Library Card Number:

NetID Password OR Library Card Verification:

Submit

OR

You want to view this item in the Rubenstein Library


Get this item for onsite use

[\(What does this mean?\)](#)

Notice: The Rubenstein Library will be closed July 1 – August 23, 2015. The requested item will be unavailable at this location during this time. [Learn More »](#)

Don't have a NetID or Library Card but want to request materials from the Library Service Center (LSC)?

Use our [LSC Guest Request Form](#)









Contact Us

411 Chapel Drive
Durham, NC 27708
(919) 660-5870
Perkins Library Service Desk


Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

Re-use & Attribution / Privacy

Support the Libraries






Figure 28. Current interface for guiding users to log into their library account (via NetID or Library Card account) or their account used to request archival material from Duke's Rubenstein Library when an item is available in multiple locations.

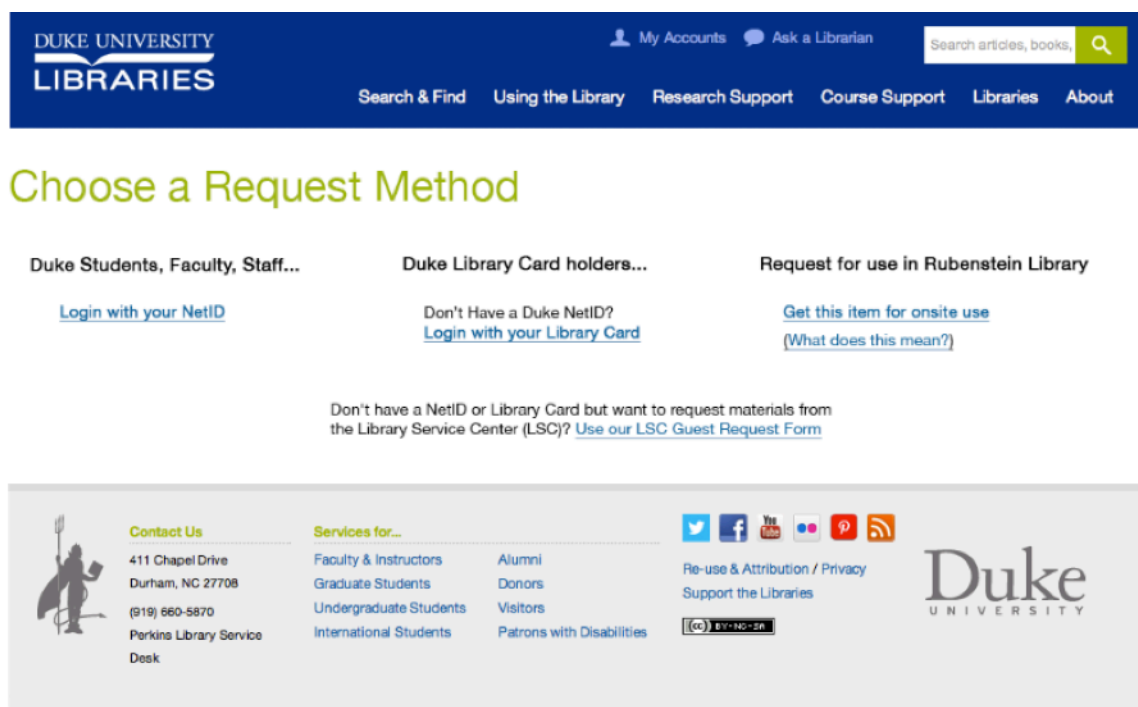


Figure 29. New interface tested in Task 2 for guiding users to log into their library account (via NetID or Library Card) or their account used to request archival material from Duke’s Rubenstein Library when an item is available in multiple locations.

4.3.1 Task 2 Completion Summary

Task 2 Successfully Completed	Number of Participants
Yes	12
No	0

Table 2. Number of participants who did or did not successfully complete Task 2.

All 12 participants completed this task successfully and most participants did not express confusion or uncertainty while completing this task. The new interface being tested in this task (Figure 29 above) received positive comments from two participants in the post-test interview, namely that the interface made it clear how to login via a specific account.

Even though all participants successfully completed this task, two participants did express some confusion during this task (see Figure 21 above, Task 2 optimal path diagram). One participant hesitated at step 1 and thought that the archives material should already be online and wasn't sure why a hard copy would be available. In the demographic questionnaire, this participant answered "Less often" for the questions asking about frequency of using UNC-CH's library website and requesting material from UNC-CH's library website. Therefore, this participant may not have been very familiar with using onsite material in archives.

Another participant hesitated at step 6 and stated not knowing how to select Lilly Library as the delivery location, but then ended up clicking the "Request" link. During step 8 in the optimal task path diagram (Figure 21 above), this participant noted that it would have been easier to select the delivery location on the screen containing the "Request" link in step 6, thus reducing the task path by eliminating steps 7 and 8. In the post-test interview, this participant suggested that the "Request" link in step 6 be renamed to be "Request Delivery To" with a menu of available delivery locations.

4.3.2 Task 2 Quantitative Questions

After each task was completed, participants answered the following post-task questions. The answers to each question are presented in Figures 30–33.

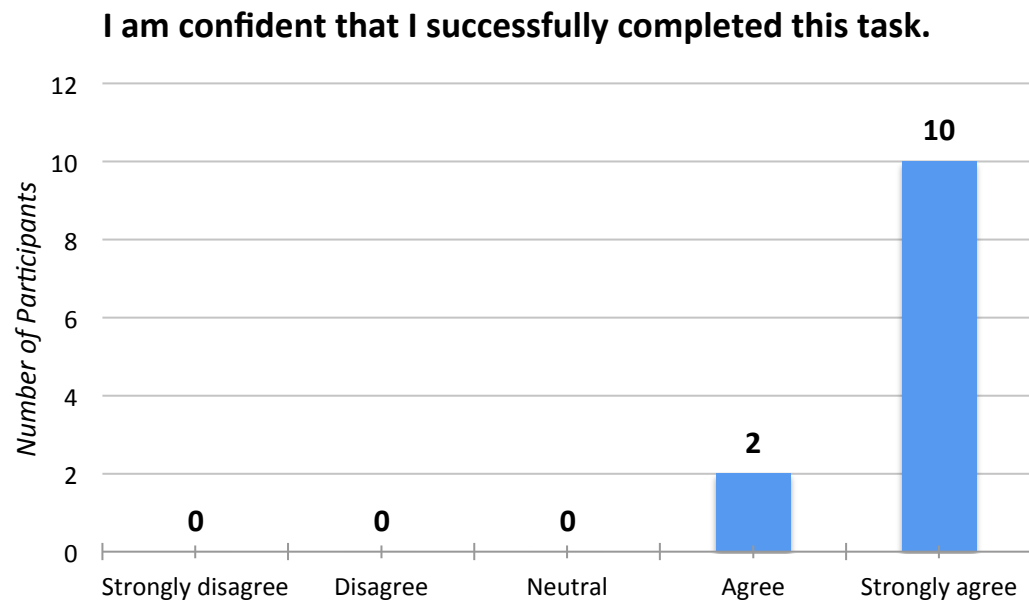


Figure 30. Participant confidence in successfully completing Task 2.

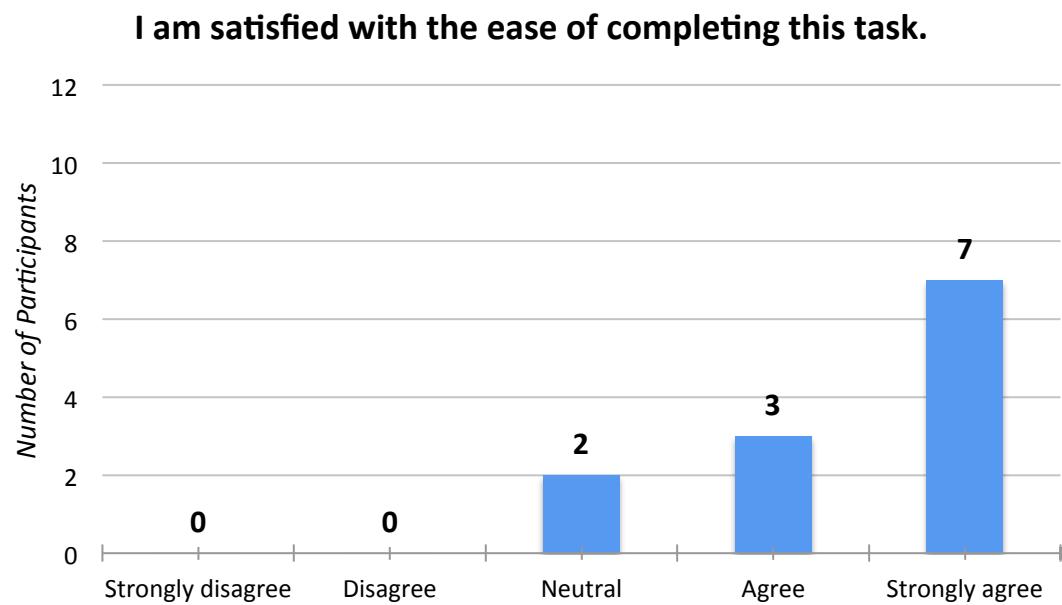


Figure 31. Participant satisfaction with the ease of completing Task 2.

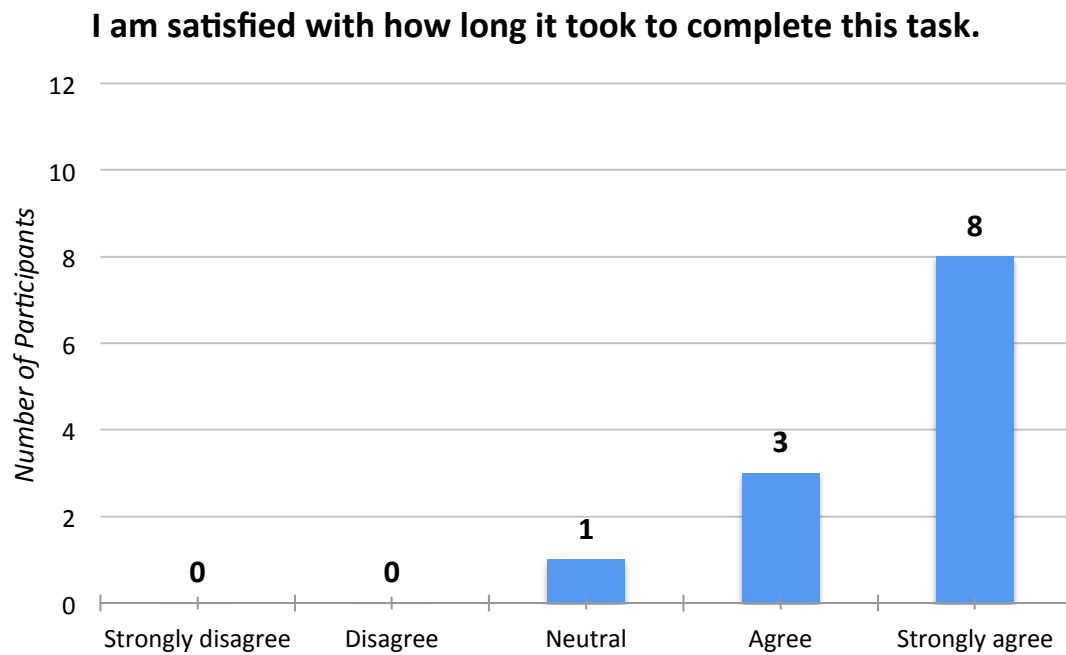


Figure 32. Participant satisfaction with how long it took to complete Task 2.

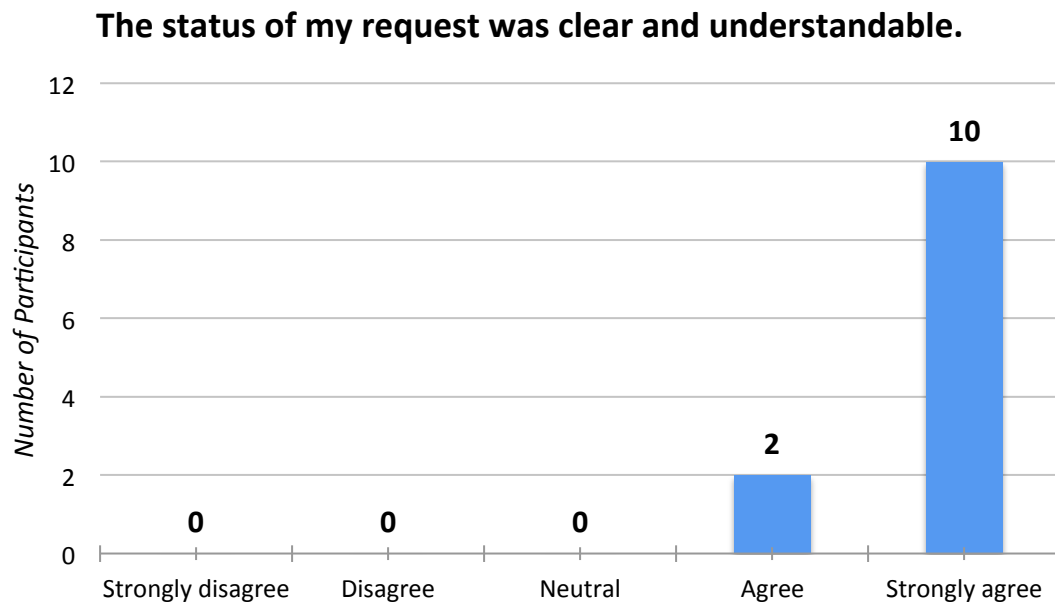


Figure 33. Participant satisfaction with the clarity of the request status in Task 2.

Based on the task completion and quantitative responses, Task 2 appeared to be a relatively easy task. Most participants answered, “Strongly agree” or “Agree” for all of these questions and there were only two participants who expressed some confusion while completing this task and in the post-test interview.

4.4 Task 3: Request Multiple Items at Once via Duke NetID Account

Task 3 started at this URL, <http://people.duke.edu/~tcrich/mockup/multi-volume-serial/catalog-screen.html> (see Figure 34).

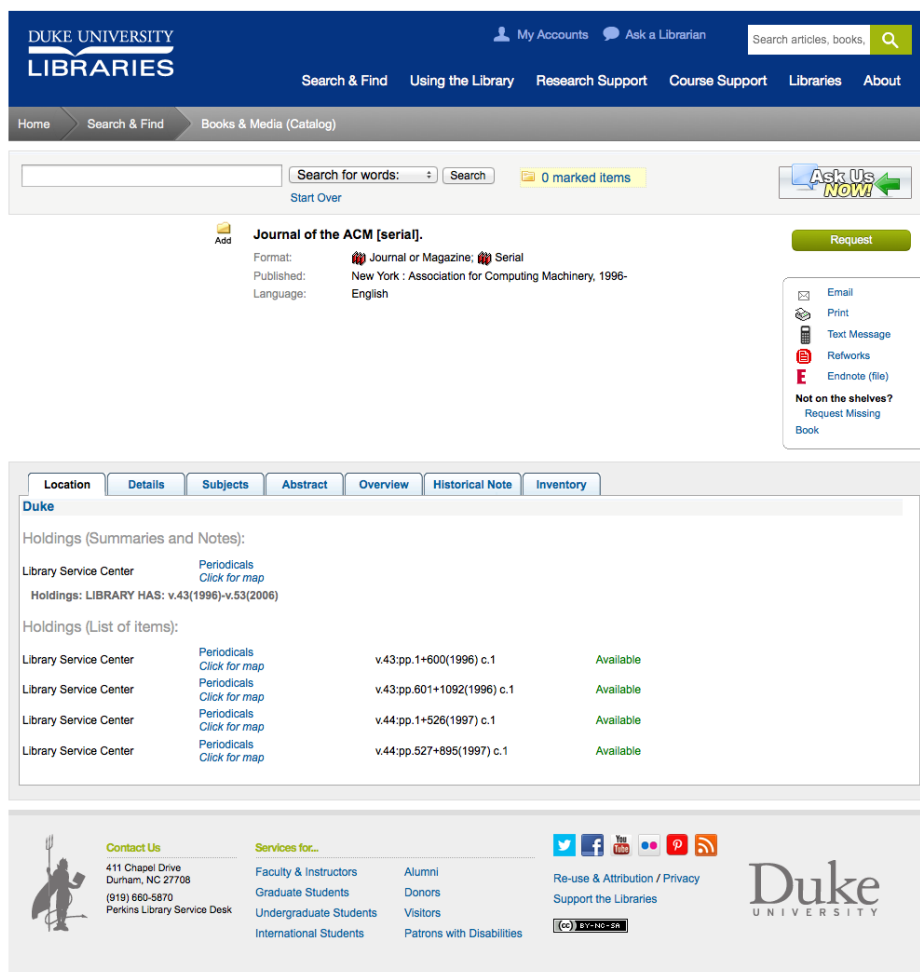


Figure 34. Interface that participants started from for Task 3.

After directing participants to the starting interface, a print out of the following task was presented to participants and was also read aloud to them:

“Again, I’d like you to imagine that you are a Duke student and you have a Duke NetID and Password. You are conducting research for your computer science class and you need to view the physical hard copies of multiple volumes of older journals.

- Show me how you would request the **entire volumes 43 and 44** of the **Journal of the ACM** from the **Library Service Center** and have them delivered to **Ford Library**.”

The optimal path for this task is presented in Figure 35 and screenshots of each step in this path are listed in Figures 36–40. Again, participants could not actually enter logins and passwords, so they verbally explained how they would do this if needed or simply clicked the “Enter” button.

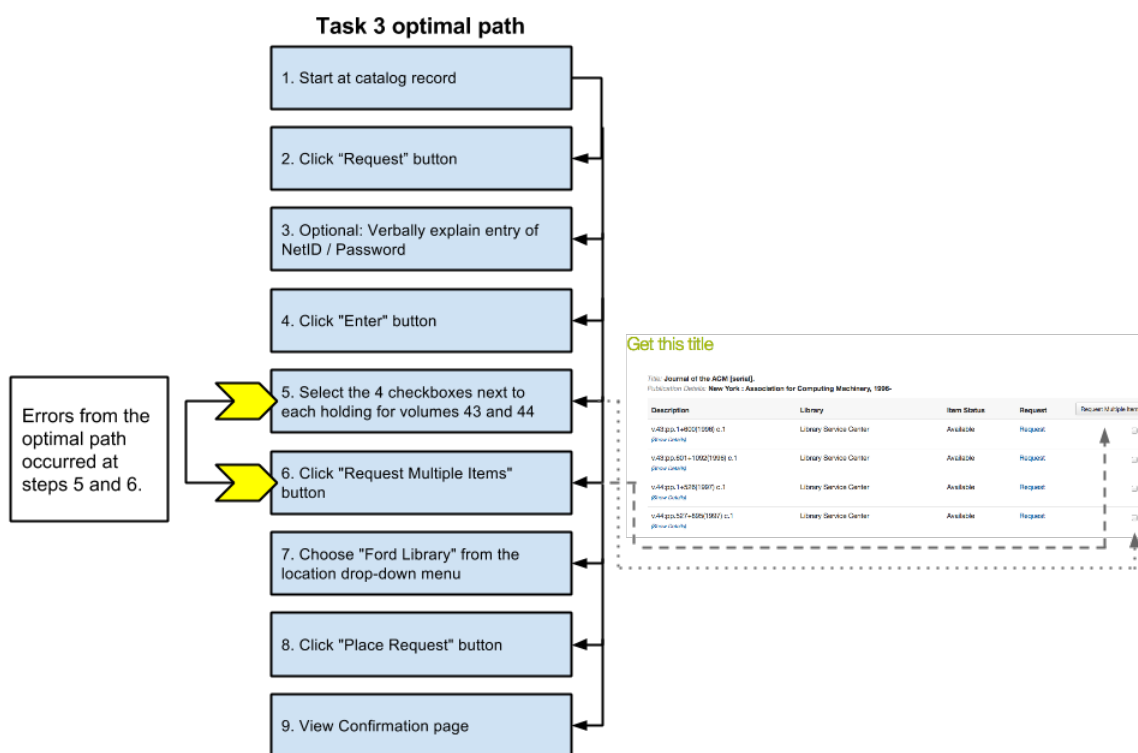


Figure 35. Task 3 optimal path and steps where errors occurred.

DUKE UNIVERSITY LIBRARIES My Accounts Ask a Librarian Search articles, books,

Search & Find Using the Library Research Support Course Support Libraries About

Home Search & Find Books & Media (Catalog)

Search for words: Search 0 marked items

Journal of the ACM [serial].

Format: Journal or Magazine; Serial
 Published: New York : Association for Computing Machinery, 1996-
 Language: English

Email
 Print
 Text Message
 Refworks
 Endnote (file)
Not on the shelves?
 Request Missing
 Book

Location **Details** **Subjects** **Abstract** **Overview** **Historical Note** **Inventory**

Duke

Holdings (Summaries and Notes):

Library Service Center [Periodicals](#)
[Click for map](#)
 Holdings: LIBRARY HAS: v.43(1996)-v.53(2006)

Holdings (List of items):

Location	Periodicals	Call Number	Availability
Library Service Center	Click for map	v.43:pp.1+600(1996) c.1	Available
Library Service Center	Click for map	v.43:pp.601+1092(1996) c.1	Available
Library Service Center	Click for map	v.44:pp.1+526(1997) c.1	Available
Library Service Center	Click for map	v.44:pp.527+895(1997) c.1	Available

Contact Us 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

Re-use & Attribution / Privacy
 Support the Libraries

Duke
UNIVERSITY

Figure 36. Task 3, screenshot for steps 1 (Start at catalog record) and 2 (Click “Request” button).

Duke | SIGN IN

» SIGN IN

NetID:

Password:

Enter

[Forgot your password?](#)

[Library Card Login / Guest Access](#)

You are on the correct Duke sign-in page if the URL above begins with <https://shib.oit.duke.edu/>.

For assistance, please visit <http://oit.duke.edu/help> or <http://dhts.duke.edu>.

Figure 37. Task 3, screenshot for steps 3 (Optional: Verbally explain entry of NetID / Password) and 4 (Click “Enter” button).

DUKE UNIVERSITY LIBRARIES

My Accounts Ask a Librarian Search

Search & Find Using the Library Research Support Course Support Libraries About

You are logged in, Jane Doe | Logout

Get this title

Title: **Journal of the ACM [serial].**
 Publication Details: **New York : Association for Computing Machinery, 1996-**

Description	Library	Item Status	Request	Request Multiple Items
v.43:pp.1+600(1996) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>
v.43:pp.601+1092(1996) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>
v.44:pp.1+526(1997) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>
v.44:pp.527+895(1997) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

Re-use & Attribution / Privacy
 Support the Libraries

Duke UNIVERSITY

Drupal Sign In

Figure 38. Task 3, screenshot for steps 5 (Select the 4 checkboxes next to each holding for volumes 43 and 44) and 6 (Click “Request Multiple Items” button).

DUKE UNIVERSITY LIBRARIES

Search & Find ▾ Using the Library ▾ Research Support ▾ Course Support ▾ Libraries ▾ About ▾

My Accounts Ask a Librarian Search

You are logged in, Jane Doe | Logout

Get this title

Title: **Journal of the ACM [serial].**
 Publication Details: **New York : Association for Computing Machinery, 1996-**

Choose a pickup or delivery location for the requested item:

Perkins / Bostock Library

Place Request

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

Re-use & Attribution / Privacy
 Support the Libraries

Drupal Sign In

Figure 39. Task 3, screenshot for steps 7 (Choose “Ford Library” from the location drop-down menu) and 8 (Click “Place Request” button).

DUKE UNIVERSITY LIBRARIES

Search & Find ▾ Using the Library ▾ Research Support ▾ Course Support ▾ Libraries ▾ About ▾

My Accounts Ask a Librarian Search

You are logged in, Jane Doe | Logout

Confirmation

Title: **Journal of the ACM [serial].**
 Publication Details: **New York : Association for Computing Machinery, 1996-**

Your request has been received. Your item will be delivered to the requested location in one to two business days.

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

Re-use & Attribution / Privacy
 Support the Libraries

Drupal Sign In

Figure 40. Task 3, screenshot for step 9 (View Confirmation page).

For Task 3, the main goal was to test new functionality that enables multiple items to be requested at one time (i.e., multiple volumes of a serial). Duke’s current system only allows for one item to be requested at a time, so users have to repeat the request process if they want to request multiple items from the same catalog record.

Figures 41 and 42 illustrate the current and revised interfaces when multiple items are available for request. Once again, the revised interfaces of pages used to make requests were also used in this task. See Appendix E to view the current and revised “Get this title” interfaces.

DUKE UNIVERSITY LIBRARIES [My Accounts](#) [Ask a Librarian](#) [Search & Find](#) [Using the Library](#) [Research Support](#) [Course Support](#) [Libraries](#) [About](#)

[Home](#) **Get this title**

You are logged in, **Bendte L Fagge**. [Logout](#)

Get this title

Title: **Journal of the ACM [serial].**
Publication Details: New York : Association for Computing Machinery, 1996-

Item not available?
[Request from another library](#)

Description	Item status	Sub-library	Collection Location	Copy Number	Due date	GetIt@Duke
v. 44: pp. 527 + 895 (1997) c. 1 (Show Details)	LSC	Library Service Center	Periodicals	1	LSC	Request
v. 44: pp. 1 + 526 (1997) c. 1 (Show Details)	LSC	Library Service Center	Periodicals	1	LSC	Request
v. 43: pp. 601 + 1092 (1996) c. 1 (Show Details)	LSC	Library Service Center	Periodicals	1	LSC	Request
v. 43: pp. 1 + 600 (1996) c. 1 (Show Details)	LSC	Library Service Center	Periodicals	1	LSC	Request

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...
 Faculty & Instructors
 Graduate Students
 Undergraduate Students
 International Students
 Alumni
 Donors
 Visitors
 Patrons with Disabilities

[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

[Twitter](#) [Facebook](#) [YouTube](#) [Instagram](#) [Pinterest](#) [RSS](#)

[CC BY-NC-SA](#)

Duke UNIVERSITY

Figure 41. Current interface for multiple items in a catalog record. A user must request each item individually and is not able to request multiple items at one time.

[My Accounts](#)
[Ask a Librarian](#)

[Search & Find](#)
[Using the Library](#)
[Research Support](#)
[Course Support](#)
[Libraries](#)
[About](#)

You are logged in, [Jane Doe](#) | [Logout](#)

Get this title

Title: **Journal of the ACM [serial].**
Publication Details: **New York : Association for Computing Machinery, 1996-**

Description	Library	Item Status	Request	<input type="button" value="Request Multiple Items"/>
v.43:pp.1+600(1996) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>
v.43:pp.601+1092(1996) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>
v.44:pp.1+526(1997) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>
v.44:pp.527+895(1997) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>

Contact Us

411 Chapel Drive
Durham, NC 27708
(919) 660-5870
Perkins Library Service Desk

Services for...

[Faculty & Instructors](#)
[Alumni](#)

[Graduate Students](#)
[Donors](#)

[Undergraduate Students](#)
[Visitors](#)

[International Students](#)
[Patrons with Disabilities](#)

[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

Figure 42. Revised interface for multiple items in a catalog record. This interface incorporates functionality that enables a user to request multiple items at one time.

4.4.1 Task 3 Completion Summary

Task 3 Successfully Completed	Number of Participants
Yes	8
No	4

Table 3. Number of participants who did or did not successfully complete Task 3.

Although eight participants successfully completed this task, three out of these eight expressed hesitation during the following (see Figure 35 above, Task 3 optimal path diagram):

- One participant hesitated at step 1 by looking for a while at the tabs located at the bottom of the catalog record, but then decided to try clicking the “Request” button.
- Another participant hesitated at step 5 and was about to click the “Request” link, but then noticed the checkboxes for selecting multiple items.
- One other participant also hesitated at step 5, but decided that selecting multiple checkboxes followed by clicking “Request Multiple Items” would probably work. This participant also expressed doubt wondering if the steps they took really worked since the volumes selected did not appear on the second instance of the “Get this title” page or the “Confirmation” page.

For the participants who did not complete this task successfully:

- Two participants only selected the first and third checkboxes.
- One participant only selected the second and fourth checkboxes.
- One participant did not select any checkboxes and only clicked the “Request Multiple Items” button. At the end of completing this task, this participant mentioned that they didn’t understand why selecting all of the volumes was the default and wondered why there wasn’t an option to select individual volumes. In addition, this participant also mentioned that the language “Request Multiple

Items” did not indicate that a user was selecting all items and they did not see a way to back out of the selection.

In the post-test interview, some participants found this task to be confusing while others thought the interface was easy-to-use and understandable. Participants who expressed confusion indicated the following:

- Two participants were not sure which volumes were available until they reached the first “Get this title” page (i.e., participants did not see the available volumes on the catalog record).
 - One participant noted they would like the selected volumes to be displayed on the “Confirmation” page.
 - One participant mentioned that they thought using the checkboxes was the correct path, but their eyes kept being drawn to the “Request” link immediately to the left of the checkboxes.
 - One participant noted that they were not sure if they should select the checkboxes first followed by “Request Multiple Items” or if they should click “Request Multiple Items” and then select the checkboxes. And they noted, “If you weren’t requesting multiple items, I don’t know what button you would have clicked.”
- This participant also mentioned that selected volumes did not display on the second “Get this title” page for placing the request or the “Confirmation” page noting that this information would be helpful.

Note: All five participants mentioned in the bulleted list above are unique.

Participants who expressed that the interface was easy-to-use and understandable indicated the following:

- One participant mentioned that the interface design was good for selecting multiple items.
- Another participant thought that being able to request multiple items at once was helpful rather than having to request each volume individually.
- One other participant mentioned being familiar with bound journal volumes being separated into parts, so it was easier to know what to select.

4.4.2 Task 3 Quantitative Questions

After each task was completed, participants answered the following post-task questions.

The answers to each question are presented in Figures 43–46.

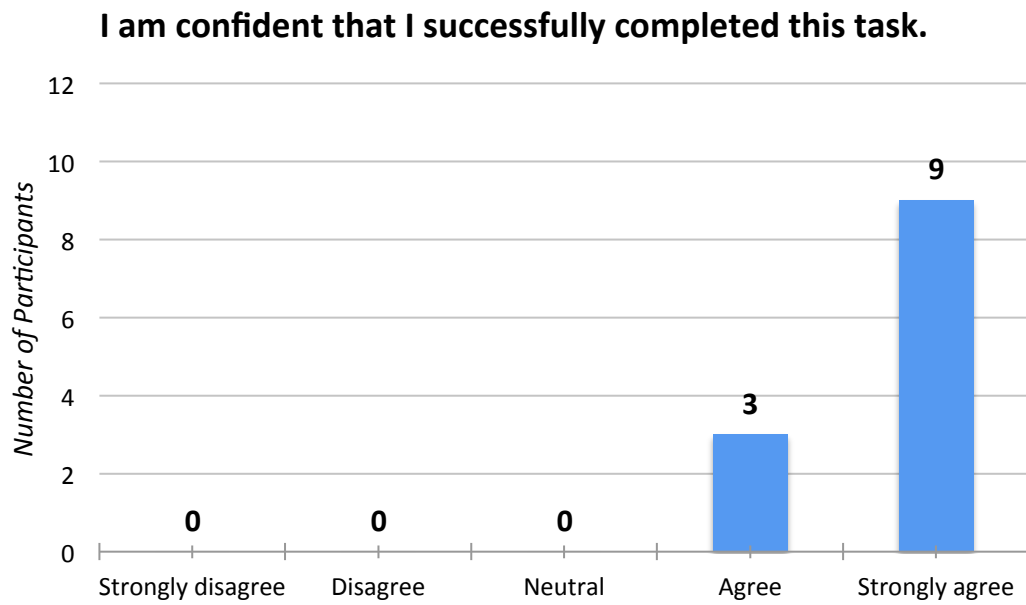


Figure 43. Participant confidence in successfully completing Task 3.

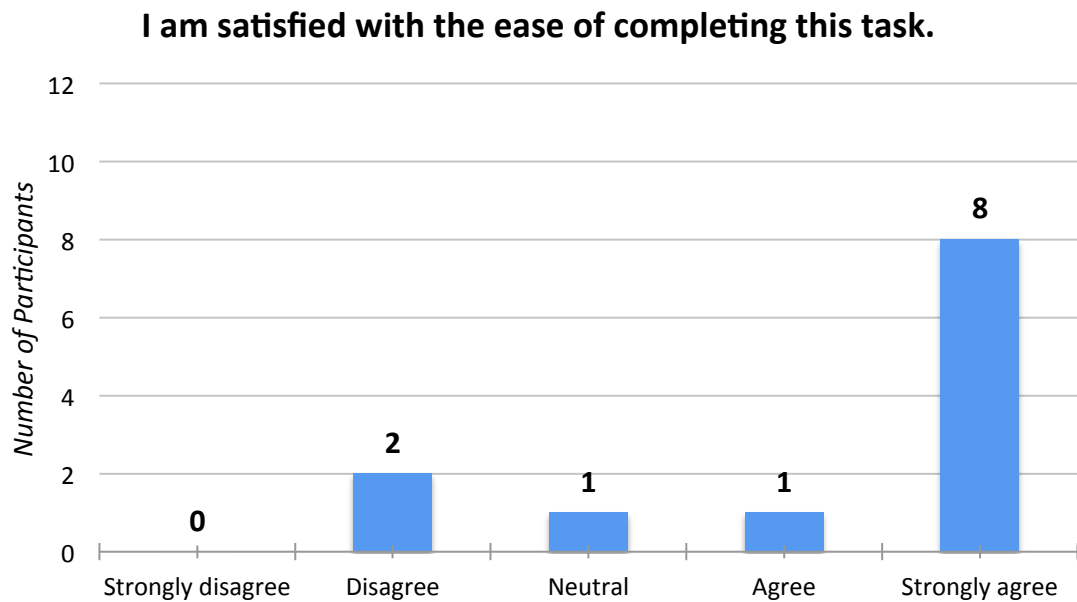


Figure 44. Participant satisfaction with the ease of completing Task 3.

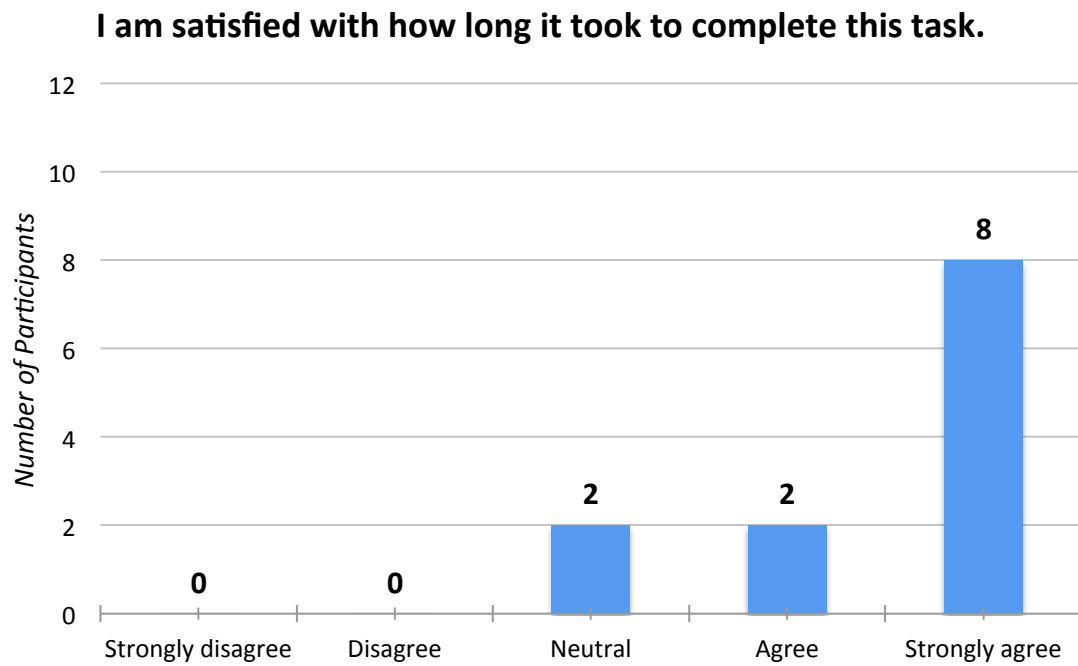


Figure 45. Participant satisfaction with how long it took to complete Task 3.

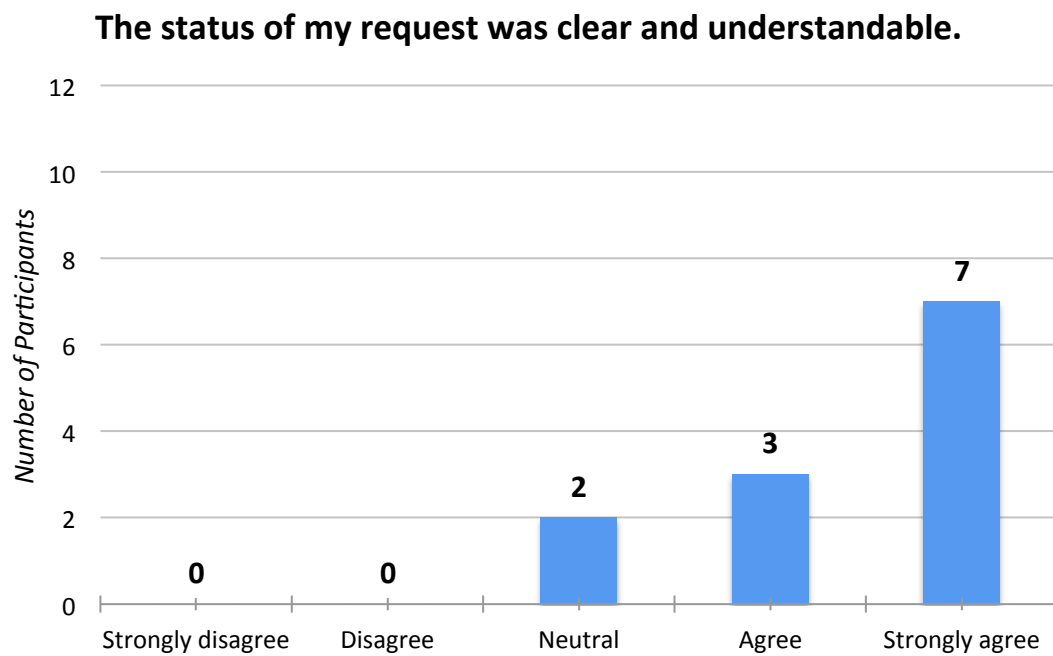


Figure 46. Participant satisfaction with the clarity of the request status in Task 3.

For confidence in successfully completing Task 3, all participants either chose “Strongly agree” or “Agree”. For the four participants who did not complete this task successfully, this suggests that there may need to be additional information added to the interface in order to help users know if they successfully completed this type of task. One participant mentioned in the post-test interview that it would be helpful to know which volumes were requested on the confirmation page. Others also noted that an email confirming a request would be helpful. These two suggestions may help users to know if they successfully requested the items they wanted.

With the number of participants who expressed confusion in completing this task, the participants who either chose “Disagree” or “Neutral” for these questions validate the answers for the ease of and time to complete tasks.

4.5 Measurements Across Tasks

For all tasks, measurements were calculated for the average time-on-task, task completion rate, and task error rate. These measurements are presented in Figures 47–49.

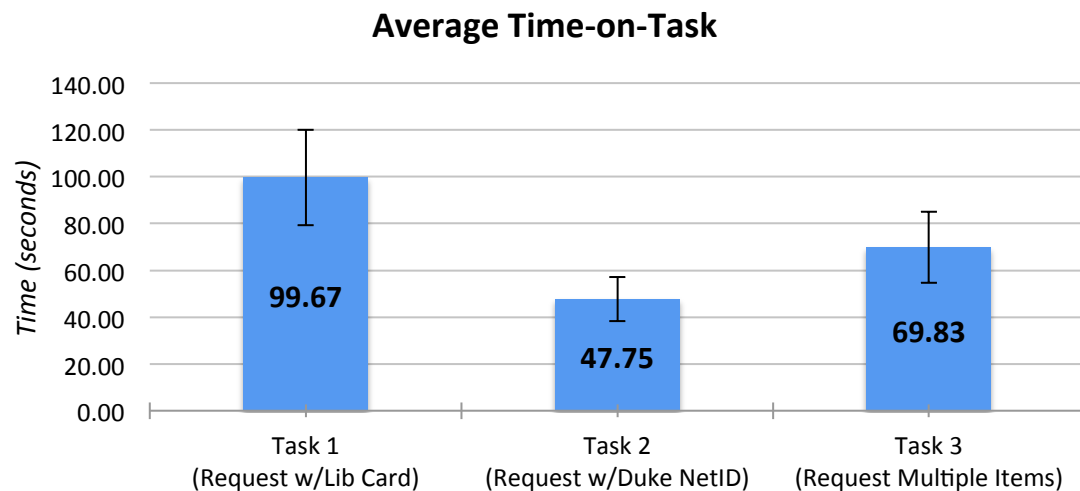


Figure 47. Average time-on-task is listed in the middle of each bar on the graph and the error bars represent a 95% confidence interval.

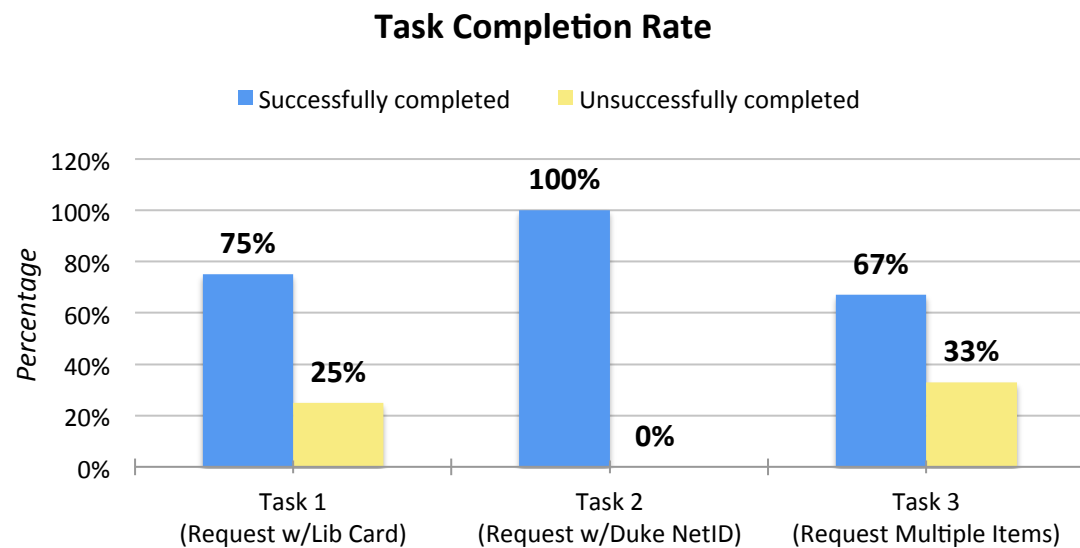


Figure 48. Task completion rate for all 12 participants for each task.

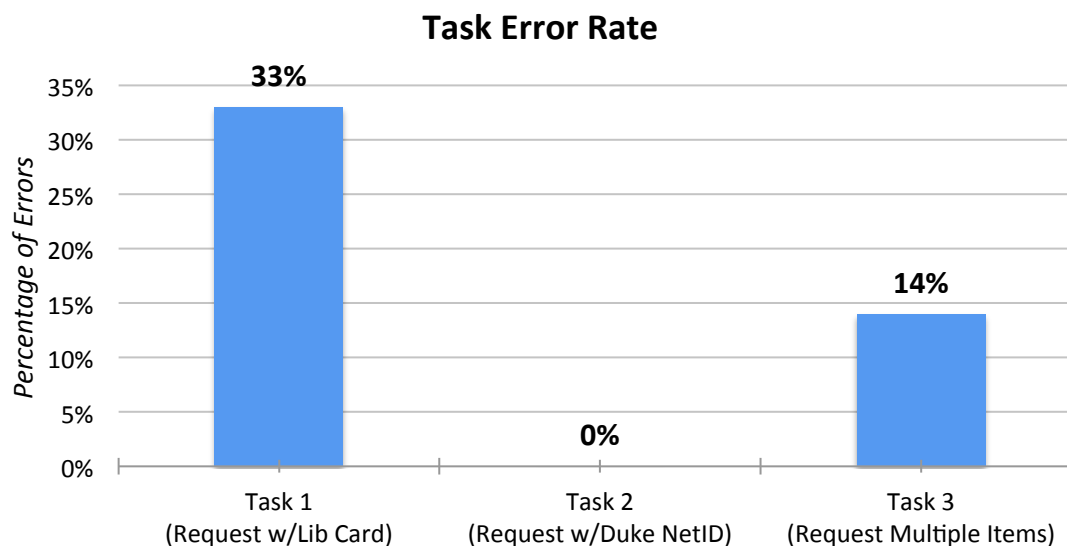


Figure 49. Task error rate for all 12 participants for each task.

On average, Task 1 took the most time and had a greater number of errors. Task 1 required participants to imagine they only had a Duke Library Card account and they had to figure out how to request a specific book given this scenario. While participants who did not complete this task successfully, did in fact request the book correctly, they did not click on the correct link for logging into a library account. If the test had been designed to incorporate an error message when participants clicked on the incorrect login link, then these participants may have successfully figured out how to log into their Library Card account. Even with this flaw in the interface that was tested, this task seemed to take participants longer because they had trouble finding the “Library Card / Guest Access” link in Figure 14. In addition, some participants who successfully completed the task also expressed difficulty finding the “Library Card / Guest Access” link.

All participants completed Task 2 successfully and did not seem to have many challenges with this task. It makes sense that the average time-on-task is lower for Task 2

in comparison to Task 1 and Task 3 given that there were no errors in completing this task. Also, participants were familiar with some of the interfaces given that they had just used them in Task 1. For Task 3, fewer participants completed this task successfully out of all three of the tasks, but there were fewer errors from the optimal path and a lower average time-on-task. This could have been due to the fact that participants were growing accustomed to the interfaces after having completed the previous two tasks, thus they completed the task faster even though this was considered to be a more difficult task.

4.6 Post-test Quantitative Questions

After all tasks were completed, participants answered the following post-test questions. The answers to each question are presented in Figures 50–52.

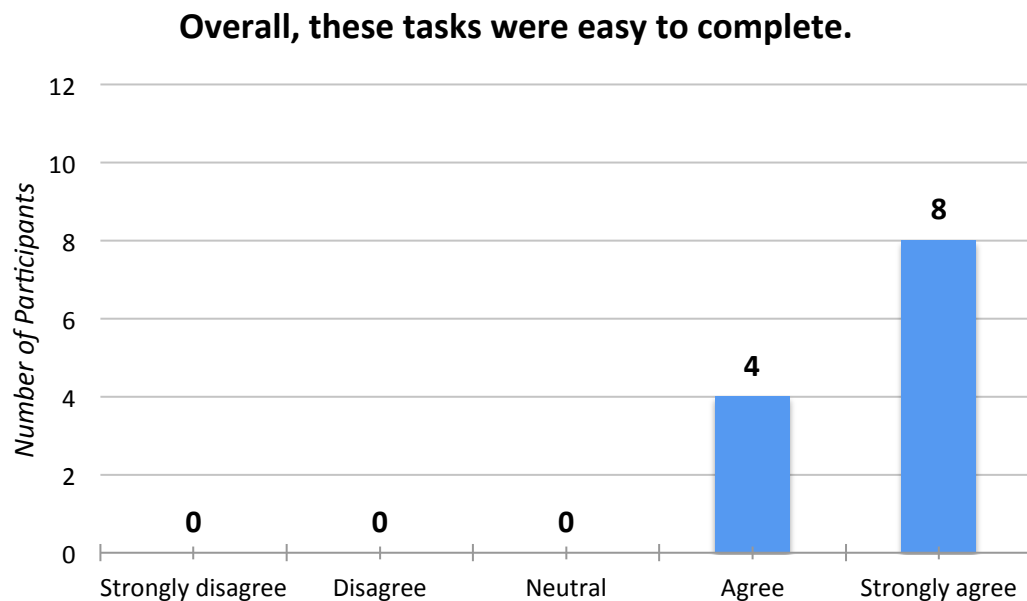


Figure 50. Participant satisfaction with the ease of completing all tasks.

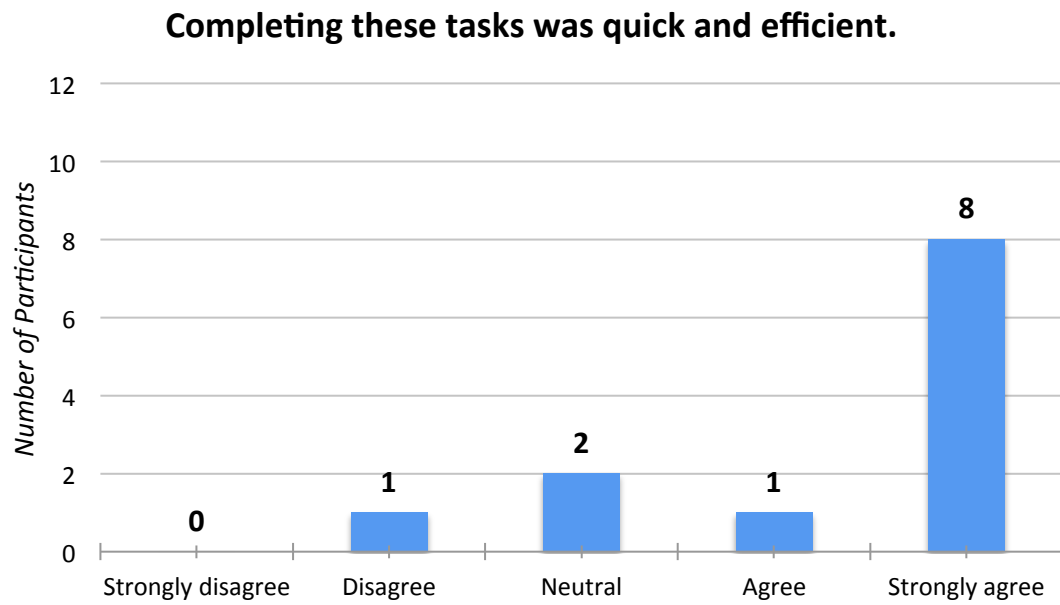


Figure 51. Participant satisfaction with how long it took to complete all tasks.

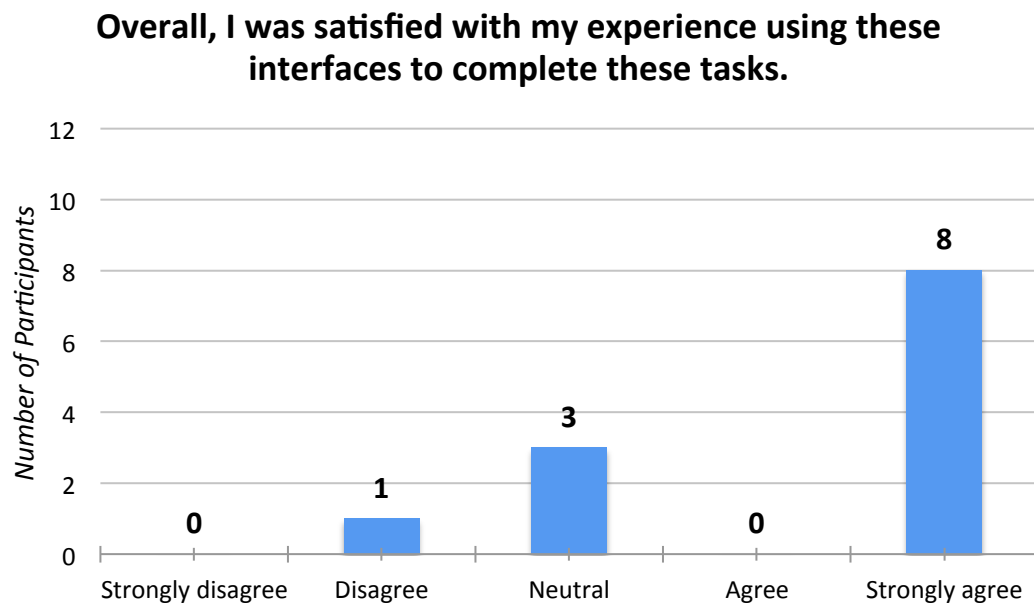


Figure 52. Participant satisfaction with using the interface mock-ups in completing these tasks.

While all participants reported that they “Strongly agree” or “Agree” with the tasks being easy to complete, some participants had disagreement on the efficiency of completing these tasks and the satisfaction of using the interfaces, which will be discussed, in the post-test interview section.

4.7 Post-test Interview

In the post-test interview, participants seemed to speak favorably about using these interfaces, but there were some overarching themes that may have prompted participants to report either “Disagree” or “Neutral” for efficiency of completing tasks and satisfaction using these interfaces. A few of these themes include: finding the login link for accessing a Library Card account, confusing interface/workflow for requesting multiple items, and additional confirmation details.

After each post-test interview question listed below, there is a table grouping the themes that emerged in the answers from all participants. After reviewing all of the post-test interview responses, themes that emerged were noted and the number of responses for each theme was counted. The number of participants who mentioned each topic is listed in parentheses next to the topic. Overall, participants focused on Task 1, Task 2, and Task 3 when discussing their answers. However, other concerns emerged from these discussions as well.

Since the first and second interview questions were similar, Table 4 lists the themes for both of these questions. Table 5 lists themes for the third interview question and Table 6 lists themes for the fourth interview question.

1. While you were completing these tasks, were you ever unsure of what to do next?

2. Was there anything confusing about using these interfaces?

Task 1 (Request w/Lib Card)	Task 2 (Request w/Duke NetID)	Task 3 (Request Multiple Items)	Other concerns	Participants who answered “No”
Library Card login link difficult to find (4)	Expected to be able to change delivery location earlier in the process (1)	Unclear about what to click to request multiple items (2)	Unsure about using the website interfaces for the first time, but was easy to figure out (2)	Interfaces were clear and intuitive (7)
	Unclear as to why archives would have a physical hard copy (1)	Expected Request link to be on catalog page (1)	Request button hard to find (1)	
		Volume availability not listed on catalog record (1)		
		Description codes for volumes unclear (1)		
		Select all volumes was the default (1)		

Table 4. Themes expressed in the first and second post-test interview questions. Numbers in parentheses indicate the number of participants who expressed this theme.

3. Was there anything you found to be helpful while using these interfaces?

Task 1 (Request w/Lib Card)	Task 2 (Request w/Duke NetID)	Task 3 (Request Multiple Items)	Other things that were helpful	Participants who answered “No”
Link at the bottom of the login screen for those who have a Library Card account (1)	Interface made it clear how to login via a specific account (2)	Being able to request multiple items at one time rather than request each one individually (2)	Interfaces are clear and easy to use (3)	Nothing stood out as exceptional, but interfaces were clear and easy (1)
			Color palette made navigation easier (2)	
			Changing the delivery location was clear (2)	
			Request button was very visible (2)	
			Confirmation page indicated request had been received (1)	

Table 5. Themes expressed in the third post-test interview question. Numbers in parentheses indicate the number of participants who expressed this theme.

4. If you could change or improve the process for requesting items using these interfaces, what would you change?

Task 1 (Request w/Lib Card)	Task 2 (Request w/Duke NetID)	Task 3 (Request Multiple Items)	Other changes or improvements	Participants who answered “No”
Library Card login should be more prominent (2)		Add all of the volumes requested to the Confirmation page (1)	Minimize how the mega menu at the top of the page pops open when hovering near it (1)	Interfaces seemed straightforward and clear (3)
		Be able to select all or select only the volumes needed (1)	Add option to request in the catalog record (1)	Would not change anything (1)
			Include everything that was requested on the Confirmation page, especially when multiple items are requested (1)	
			Send an email confirmation for requests (2)	
			Add a map to the interface where delivery location can be changed (1)	

Table 6. Themes expressed in the fourth post-test interview question. Numbers in parentheses indicate the number of participants who expressed this theme.

5. Is there anything else you'd like to share about your experience completing these tasks?

All participants answered “No” to this question. However three participants shared a bit more information afterward. Two participants noted that the tasks seemed easy and that the test would have been more difficult had they actually had to search for the materials before requesting them. One other participant also mentioned the confusing interface for logging into a NetID or Library Card account. This participant noted that the login interface is the only item they would fix.

5 Discussion

The goal of this study was to assess the functionality and ease of use for new and revised user interface designs that will be used to request items from Duke University Libraries that are on the shelf or items that are stored offsite at their Library Service Center. The specific interface changes that were tested include: account login, placing requests for single and multiple items, selecting delivery location, and the clarity of confirmation status. By testing these interface designs, changes can be made to improve the user experience of these interfaces before integrating them into Duke Libraries' live website. A literature review revealed few usability studies focusing on request functionality in libraries, so the study reported on here contributes to the body of knowledge in library and information science about the usability and evaluation of request functionality interface designs. Since libraries often have limited resources to conduct usability tests, it is hoped that the findings reported here are helpful to other future projects to design web-based request functions.

While all participants agreed that the tasks were easy to complete, participant comments during the test and in the post-test interview revealed problems encountered while using these interface mock-ups. For Task 1, three participants failed to complete the task successfully because they did not click on the correct account login link. However, error messages were not built into the interface mock-ups, which may have changed this outcome. The most revealing aspect of this task was the difficulty many participants had in finding the Library Card login link. While Duke University Libraries

is using a new login interface to comply with Duke's Office of Information Technology, the current interface design does not make the "Library Card / Guest Access" link very prominent. In addition to users who have Duke accounts (Duke NetID), Duke University Libraries also serves those who do not have NetID accounts (e.g., Library Card accounts or those requesting guest access).

In general, participants reported Task 2 to be easy and all participants completed this task successfully. While one participant was confused at first by why an archive would have a physical copy of an item, this participant reported not having much experience using archives and noted that all archives may not have all of their materials digitized. One other participant noted that they expected to be able to change the delivery location earlier in the process, but otherwise noted that the task was still easy to complete.

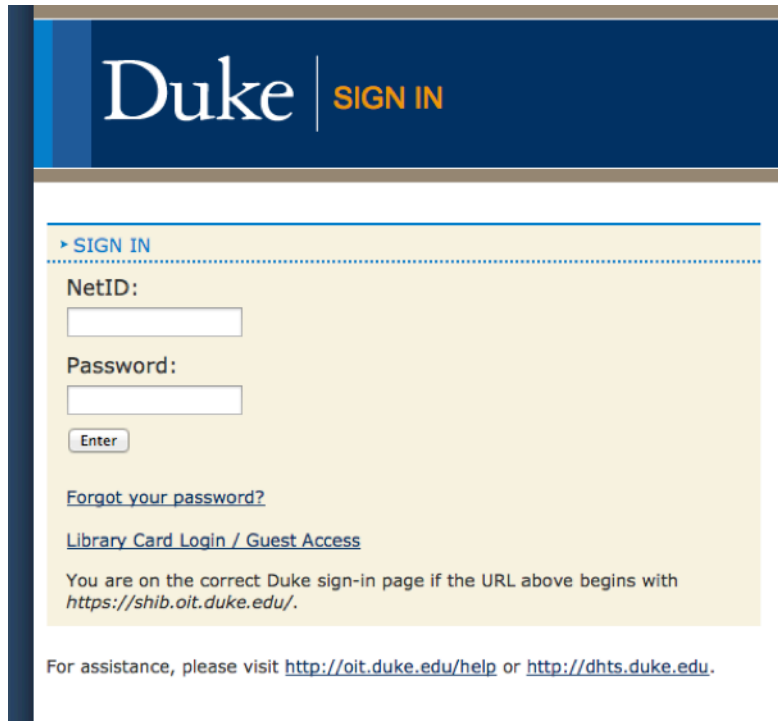
Task 3 had the most participants fail to complete the task. These participants either did not select all of the volumes needed in this task or thought the "Request Multiple Items" button would select all the volumes listed. Since the bound journal volumes were broken up into parts (i.e., each volume consists of two separate bound books), some participants may not be aware that journal volumes can be bound this way or the description in the interface may not have been clear that each volume consisted of two parts. One participant noted that it would be helpful if all of the requested items for this task were listed on the "Confirmation" page.

The two main challenges that emerged from testing these interfaces are the difficulty in finding the "Library Card / Guest Access" link (on the "Duke Sign In" page) in order to log into a Library Card account and the interface for requesting multiple items.

Other themes that emerged include: listing all items requested on the “Confirmation” page, sending an email confirmation of items requested to a user, including a campus map or link to a campus map near the option to select a delivery location, moving the “Request” link to the catalog record, and moving the option to select a delivery location earlier in the task flow.

6 Recommendations

6.1 “Library Card / Guest Access” Link on Duke Sign In page



The screenshot shows the Duke Sign In page. At the top, there is a dark blue header with the word "Duke" in white and "SIGN IN" in orange. Below the header, there is a light yellow sign-in box. Inside the box, there is a "SIGN IN" link at the top left. Below it, there are two input fields: "NetID:" and "Password:". Below the "Password:" field is an "Enter" button. Below the "Enter" button is a link for "Forgot your password?". Below that is a link for "Library Card Login / Guest Access". Below the link is a note: "You are on the correct Duke sign-in page if the URL above begins with https://shib.oit.duke.edu/." At the bottom of the page, there is a footer with the text: "For assistance, please visit <http://oit.duke.edu/help> or <http://dhts.duke.edu>."

Participants found the “Library Card / Guest Access” link difficult to find on this page and suggested that it be more prominent. Some recommendations to consider include: investigating whether the display can be changed in a way so that username/password fields for both NetID and Library Card users display on this interface or investigate another interface option for displaying the Library Card login.

6.2 Requesting Multiple Items

Get this title

Title: **Journal of the ACM [serial].**

Publication Details: **New York : Association for Computing Machinery, 1996-**

Description	Library	Item Status	Request	Request Multiple Items
v.43:pp.1+600(1996) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>
v.43:pp.601+1092(1996) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>
v.44:pp.1+526(1997) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>
v.44:pp.527+895(1997) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>

Cardello (2013) notes that redundant links can increase cognitive strain because a user has more choices on the page even though the choices are the same. While the last two columns on the right-hand side of this page are for initiating a request, participants expressed confusion about exactly what they needed to click on in order to complete Task 3. Even though a user can only initiate a request for one item via the blue “Request” links in the fourth column, whereas a user can initiate a request for single or multiple items via the “Request Multiple Items” button in the fifth column, the two columns seem to have redundant functionality. Some recommendations to consider include:

- Possibly remove “Request” links, so that there are only checkboxes for selecting single or multiple items to request.
- Possibly change language of “Request Multiple Items” button to simply read, “Request” or perhaps either “Request Selected Items” or “Request Checked Items”.
- Investigate other possible solutions for selecting either single or multiple items within the same interface without creating redundancy.

6.3 “Get this title” Page (first instance, single-item request)

[My Accounts](#)
[Ask a Librarian](#)

[Search & Find](#)
[Using the Library](#)
[Research Support](#)
[Course Support](#)
[Libraries](#)
[About](#)

You are logged in, [Jane Doe](#) | [Logout](#)

Get this title

Title: **Harry Potter and the half-blood prince**
Author: **Rowling, J. K.**
Publication Details: **New York: Arthur A. Levine Books, c2005.**

Description	Library	Item Status	Request
C. 1 (Show Details)	Perkins/Bostock Library	On Shelf	Request
C. 2 (Show Details)	Perkins/Bostock Library	On Shelf	Request
C. 3 (Show Details)	Perkins/Bostock Library	On Shelf	Request

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

[Drupal Sign In](#)

For single item requests, consider integrating delivery location with request link on this page, thus eliminating the second “Get this title” page for actually placing the request (i.e., change “Request” link to read “Request Delivery To” that includes a delivery location drop-down menu).

6.4 “Get this title” Page (second instance, for selecting delivery location and placing request)

DUKE UNIVERSITY LIBRARIES

My Accounts Ask a Librarian

Search articles, books,

Search & Find Using the Library Research Support Course Support Libraries About

You are logged in, **Bendte L Fagge**. [Logout](#)

Get this title

Title: **Journal of the ACM [serial].**
 Publication Details: New York : Association for Computing Machinery, 1996-

Location:

[Place Request](#)

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...
 Faculty & Instructors
 Graduate Students
 Undergraduate Students
 International Students
 Alumni
 Donors
 Visitors
 Patrons with Disabilities

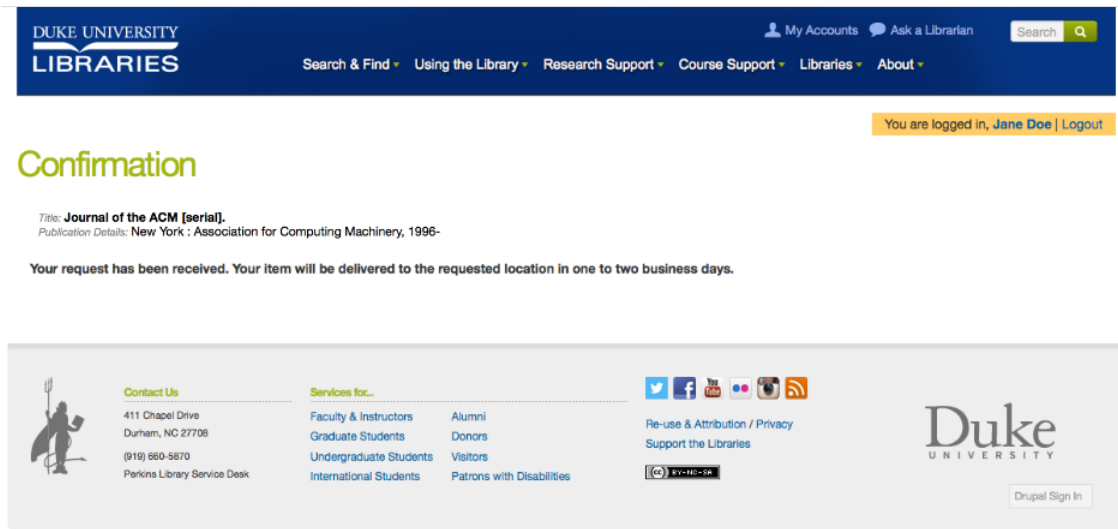
Re-use & Attribution / Privacy
 Support the Libraries

Duke
UNIVERSITY

Lidwell, Holden, and Butler (2003) describe the principle of confirmation as “. . . a means of verifying that an action or input is intentional and correct before it is performed.” (Lidwell, Holden, & Butler, 2003, p. 54) Given this principle, below are two recommendations to consider for this interface:

- For multiple-item requests, display all volumes (or items) selected on the second instance of the “Get this title” page.
- Consider adding a map or a link to a map of the delivery locations available.

6.5 Confirmation Page



Again, the principle of confirmation informed the following recommendations for the “Confirmation” page (Lidwell, Holden, & Butler, 2003).

- Display all volumes (or items) selected for a multiple-item request on the “Confirmation” page.
- Add functionality to email user the details of their request and in the status display on the “Confirmation” page, state that an email will be sent to the user that includes the details of their request (i.e., items they requested, delivery location, expected delivery date).

7 Conclusion

While the literature revealed few usability studies focusing on request functionality, it seems that this could be an area that needs further investigation. Oftentimes, academic libraries require users to have several different accounts in order to request different types of material. Having to keep track of usernames and passwords for multiple accounts is cumbersome enough, not to mention having to learn how to navigate different user interfaces to request materials. This study specifically focused on account logins as well as single-item and multiple-item requests. Even though these are simply two aspects of request functionality and academic library websites as a whole, creating a better user experience for requesting materials could increase the usage of request services.

An area for future research is single sign-on for multiple accounts used for requesting materials in academic libraries. Halling and Hahn (2013) report that Texas A & M Libraries developed a single sign-on for all interlibrary loan and document delivery request services. This illustrates that single sign-on is possible and hopefully can be expanded to other academic libraries. In addition to the problem of multiple accounts, being able to request multiple items at once in an intuitive way is also important, especially for archival material where researchers often need to request multiple boxes in a collection. In addition, paying attention to users' expectations, particularly when it comes to choosing delivery locations and providing enough details in confirmation statuses, should be considered when designing request functionality in academic library websites.

Bibliography

- Atkins, D. P., Greenwood, J. T., & Whaley, P. (2014). Benchmarking and pondering ASERL interlibrary loan operations, 2010 and 2013. *Interlending & Document Supply*, 42(1), 16-25. doi:10.1108/ILDS-01-2014-0010
- Ayre, L. B. (2007). Library delivery 2.0: Delivering library materials in the age of Netflix. *Library Philosophy and Practice*, 9(2), 1-6.
- Bell, S. J. (2014). Staying true to the core: Designing the future academic library experience. *Portal: Libraries and the Academy*, 14(3), 369-382.
- Burk, R. (2006). Self-service interlibrary loan: A primer for reference staff. *Reference Librarian*, 45(93), 73-82. doi:10.1300/J120v45n93_06
- Cardello, J. (2013). Four dangerous navigation approaches that can increase cognitive strain. Retrieved from: <http://www.nngroup.com/articles/navigation-cognitive-strain/>
- Casey, M. E., & Savastinuk, L. C. (2006). Library 2.0. *Library Journal*, 131(14), 40-42.
- Delaney, T. (1996). ZAP: An electronic request system. Planning, development and adaptation in a network environment. *Journal of Library Administration*, 23(1-2), 141-153.
- Dupont, C., & Yakel, E. (2013). "What's so special about special collections?" or, assessing the value special collections bring to academic libraries. *Evidence Based Library & Information Practice*, 8(2), 9-21.

- Forrest, C. (2009). Academic libraries as learning spaces: Library effectiveness and the user experience. *Georgia Library Quarterly*, 46(3), 7-10.
- Halling, T. D., & Hahn, D. C. (2013). Bringing interlibrary loan services under a single sign-on umbrella. *Library Hi Tech*, 31(1), 76-86. doi:10.1108/07378831311303949
- Haslam, M., Lee Kwon, M., Pearson Marilyn, M., & White, M. (2002). The automated storage and retrieval system (ASRS) in Lied Library. *Library Hi Tech*, 20(1), 71-89. doi:10.1108/07378830210420708
- Kenefick, C., & DeVito, J. A. (2013). Google expectations and interlibrary loan: Can we ever be fast enough? *Journal of Interlibrary Loan, Document Delivery & Electronic Reserves*, 23(3), 157-163. doi:10.1080/1072303X.2013.856365
- Kohl, D. F. (1998). How the virtual library transforms interlibrary loans - the OhioLINK experience. *Interlending & Document Supply*, 26(2), 65-69.
- Kruger, B. (2003). Beyond the blueprints: Enhancing access to materials in remote storage. *Journal of Access Services*, 1(3), 45-55. doi:10.1300/J204v01n03_05
- Levine-Clark, M. (2014). Access to everything: Building the future academic library collection. *Portal: Libraries and the Academy*, 14(3), 425-437.
- Lidwell, W., Holden, K., & Butler, J. (2003). *Universal principles of design*. Gloucester, Mass.: Rockport.
- Mitchell, E., & Yu, C. (2007). Bringing delivery into the fold: A discussion of cross-departmental document delivery service implementation in academic libraries. *Journal of Access Services*, 5(1), 331-342. doi:10.1080/15367960802199174
- Nielsen, J. (2012). Thinking aloud: The #1 usability tool. Retrieved from: <http://www.nngroup.com/articles/thinking-aloud-the-1-usability-tool/>

- Nielsen, J. (2012). User satisfaction vs. performance metrics. Retrieved from:
<http://www.nngroup.com/articles/satisfaction-vs-performance-metrics/>
- Pernice, K. (2014). Talking with participants during a usability test. Retrieved from:
<http://www.nngroup.com/articles/talking-to-users/>
- Porat, L. (2001). Automation of interlibrary loan services: Effects on the patron and the library. *Interlending & Document Supply*, 29(3), 108-113.
 doi:10.1108/02641610110400293
- Prabha, C., & O'Neill, E. (2001). Interlibrary borrowing initiated by patrons: Some characteristics of books requested via OhioLINK. *Journal of Library Administration*, 34(3), 329-338. doi:10.1300/J111v34n03_13
- Rabina, D., & Peet, L. (2014). Meeting a composite of user needs amidst change and controversy: The case of the New York Public Library. *Reference & User Services Quarterly*, 54(2), 52.
- Reid, D., Bowden, M., & McCartin, S. (2005). End-user requesting - trail-blazing, kiwi style. *The Electronic Library*, 23(6), 652-663. doi:10.1108/02640470510635737
- Rogers, Y., Sharp, H., & Preece, J. (2011). *Interaction design: Beyond human-computer interaction*. Chichester, West Sussex: Wiley.
- Rubin, J., & Chisnell, D. (2008). *Handbook of usability testing: How to plan, design, and conduct effective tests*. Indianapolis, IN: Wiley Publishing, Inc.
- Samuelson, T., & Coker, C. (2014). Mind the gap: Integrating special collections teaching. *Portal: Libraries and the Academy*, 14(1), 51-66.
- Tullis, T., & Albert, B. (2013). *Measuring the user experience: Collecting, analyzing, and presenting usability metrics*. Amsterdam: Elsevier.

Walton, R. (2015). *Looking for answers: A usability study of online finding aid navigation*. Retrieved from <http://search.lib.unc.edu?R=UNCb8309281>

Ward, J., & Hiller, S. (2005). Usability testing, interface design, and portals. *Journal of Library Administration*, 43(1), 155-171. doi:10.1300/J111v43n01_10

Wessling, J. (1993). Electronic ILL: The user interface. *Document Delivery World*, 9(3), 24.

Appendix A: Recruitment Email

[Subject:] Participants needed for a website usability study

Hello,

My name is Bendte Fagge and I am a graduate student in the School of Information and Library Science at UNC-Chapel Hill. I'm writing to invite you to participate in my research study about improving the usability of requesting items from Duke University Libraries' website.

To be eligible to participant in this study, you:

- must be 18 years of age or older,
- must be a student, faculty, or staff member of UNC-Chapel Hill, and
- must not have a Duke University NetID account, a Duke University Library Card account, OR a Duke Card.

The study will involve a one-time, on-campus testing session (lasting approximately 30 minutes) during which participants will be asked to interact with website interfaces for Duke University Libraries and answer questions about their experience. Upon completion of the testing session, participants will receive compensation of \$10.00.

Participation in this study is completely voluntary and all responses will remain anonymous and confidential. This study has been approved by the UNC Institutional Review Board (Study # 15-1366).

If you would like to participate or have any questions about this study, please feel free to contact me at bfagge@live.unc.edu.

Thank you,

Bendte Fagge

MSIS Candidate, 2015

School of Information and Library Science

University of North Carolina at Chapel Hill

Appendix B: Questionnaires

Demographic Questions

1. Mark your affiliation (mark all that apply)
 - ☐ Undergraduate student at UNC-Chapel Hill
 - ☐ Graduate student at UNC-Chapel Hill
 - ☐ Faculty member at UNC-Chapel Hill
 - ☐ Staff member at UNC-Chapel Hill
2. What department or program are you in?
3. Have you ever used Duke University Libraries' website?
 - ☐ Yes (if yes, please explain how you've used this website _____)
 - ☐ No
4. How often do you use UNC-Chapel Hill University Libraries' website?
 - ☐ Daily
 - ☐ A few times a week
 - ☐ A few times a month
 - ☐ A few times a semester
 - ☐ Less often
 - ☐ I have never used UNC-Chapel Hill University Libraries website.

5. How often do you request items from UNC-Chapel Hill University Libraries through the library website (e.g., Interlibrary Loan or from UNC Special Collections)?

- ☐ Daily
- ☐ A few times a week
- ☐ A few times a month
- ☐ A few times a semester
- ☐ Less often
- ☐ I have never requested an item from UNC-Chapel Hill University Libraries through their library website.

Post-task Questions

Please indicate how much you agree or disagree with the following statements by marking one response next to each statement.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I am confident that I successfully completed this task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am satisfied with the ease of completing this task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am satisfied with how long it took to complete this task.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The status of my request was clear and understandable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Post-test Questions

Please indicate how much you agree or disagree with the following statements by marking one response next to each statement.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Overall, these tasks were easy to complete.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Completing these tasks was quick and efficient.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, I was satisfied with my experience using these interfaces to complete these tasks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Post-test Interview

1. While you were completing these tasks, were you ever unsure of what to do next?
2. Was there anything confusing about using these interfaces?
3. Was there anything you found to be helpful while using these interfaces?
4. If you could change or improve the process for requesting items using these interfaces, what would you change?
5. Is there anything else you'd like to share about your experience completing these tasks?

Appendix C: Consent Form

University of North Carolina-Chapel Hill

Consent to Participate in a Research Study

IRB Study # 15-1366

Project Title: Usability Study of Request Functionality in Website User Interfaces at Duke University Libraries

Principal Investigator: Bendte Fagge

Principal Investigator Department: School of Info & Libr Science

Principal Investigator Phone Number: 919-308-3363

Principal Investigator Email Address: bfagge@live.unc.edu

Faculty Advisor: Rob Capra

Faculty Advisor Contact Information: rcapra@email.unc.edu, 919-962-9978

Funding Source and/or Sponsor: Carnegie Grant from the School of Information and Library Science, 919-962-8366

What are some general things you should know about research studies?

You are being asked to take part in a research study. To join the study is voluntary. You may refuse to join, or you may withdraw your consent to be in the study, for any reason without penalty.

Research studies are designed to obtain new knowledge. This new information may help people in the future. You may not receive any direct benefit from being in the research study. There also may be risks to being in research studies.

Details about this study are discussed below. It is important that you understand this information so that you can make an informed choice about being in this research study.

You will be given a copy of this consent form. You should ask the researchers named above any questions you have about this study at any time.

What is the purpose of this study?

The purpose of this research study is to assess the functionality and ease of use of new and revised user interface designs that will be used to request items from Duke University Libraries using the library's website.

Are there any reasons you should not be in this study?

You should not be in this study if you:

- are under the age of 18,
- are not a student, faculty, or staff member of UNC-Chapel Hill,
- have a Duke NetID account, Duke Library Card account, or Duke Card.

How many people will take part in this study?

A total of approximately 12 people will take part in this study.

How long will your part in this study last?

This study will last approximately 30 minutes.

What will happen if you take part in this study?

You will be asked:

- demographic questions before the study begins,
- to complete a set of tasks using interface mock-ups,
- complete post-task and post-test quantitative questions, and
- complete post-test qualitative questions.

The study will record screen interactions and audio as you complete each task and answer all of the questions.

What are the possible benefits from being in this study?

You will not benefit personally from being in this research study, but research is designed to benefit society by gaining new knowledge.

What are the possible risks or discomforts involved from being in this study?

The only foreseeable risk is potentially being embarrassed if you do not know how to complete a task. However, there are no right or wrong answers. Your performance and responses are not being judged; rather the functionality of the site is being evaluated. This risk will be minimized by testing participants individually. However, there may be uncommon or previously unknown risks. You should report any problems to the researcher. Please use the email address or phone number provided on the first page of this form if problems arise after you have completed participation.

How will your privacy be protected?

Participants' names, email addresses, or any other potentially identifiable information will not be linked to the recordings, questionnaires, or data gathered in the study. Each participant will be assigned a random study ID number that will be used in the file name(s) containing the data and on questionnaires the participant completes.

Screen/audio recordings and associated data files will be stored in a single, password-protected location, only accessible to the principal investigator. Participant names will be stored separately from the study data and participant names will only be used on consent forms as well as for receipt of compensation. At no time will participant names be associated with their study ID number.

Participants will not be identified in any report or publication about this study. Although every effort will be made to keep research records private, there may be times when federal or state law requires the disclosure of such records, including personal information. This is very unlikely, but if disclosure is ever required, UNC-Chapel Hill will take steps allowable by law to protect the privacy of personal information. In some cases, your information in this research study could be reviewed by representatives of the University, research sponsors, or government agencies (for example, the FDA) for purposes such as quality control or safety.

Once the study has been completed and the results recorded, the recordings, any files associated with the participant's random study ID number, questionnaires, contact information, and correspondence will be deleted.

What if you want to stop before your part in the study is complete?

You can withdraw from this study at any time, without penalty. The investigator also has the right to stop your participation at any time. This could be because you have had an unexpected reaction, or have failed to follow instructions, or because the entire study has been stopped.

Will you receive anything for being in this study?

You will receive \$10 for completing this study.

Will it cost you anything to be in this study?

It will not cost you anything to be in this study.

What if you have questions about this study?

You have the right to ask, and have answered, any questions you may have about this research. If you have questions about the study (including payments), complaints, or concerns, you should contact the researchers listed on the first page of this form.

What if you have questions about your rights as a research participant?

All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject, or if you would like to obtain information or offer input, you may contact the Institutional Review Board at 919-966-3113 or by email to IRB_subjects @unc.edu.

Participant's Agreement:

I have read the provided information above. I have asked all the questions I have at this time. I voluntarily agree to participate in this study.

Signature of Research Participant

Date

Printed Name of Research Participant

Signature of Researcher Obtaining Consent

Date

Printed Name of Researcher Obtaining Consent

Appendix D: Observation Script

Hello, my name is Bendte Fagge and I'm a graduate student in the School of Information and Library Science at UNC-Chapel Hill. I will be moderating this study today and I wanted to let you know that I'm going to be reading from my script to ensure that this research study is uniformly administered to all participants.

Thank you for agreeing to take part in this study.

Duke University Libraries is currently trying to improve the ways in which materials are requested from the Duke Libraries' website. I will be asking you to complete a few short tasks involving requesting materials from Duke Libraries. I will also be asking you questions about your experience with completing these tasks. The interfaces you will use to complete these tasks are mock-ups and are not the actual website for Duke Libraries. You will be able to click on most links in these interfaces. However, these interface mock-ups do not allow entry of logins and passwords. If you need to enter a login and password to complete any of the following tasks, then you can simply tell me that you would enter a login and password.

While you are completing these tasks, I will be recording your screen interactions using screen recording software. I will also be recording audio and taking notes during the study.

Keep in mind that there are no right or wrong answers and that I'm testing a tool — not you. If you have any questions about the tasks as we go along, feel free to ask them. I may not be able to answer them right away, since I'm interested in how people do when

they don't have someone sitting next to them to help. But if you still have any questions when we're done, I'll try to answer them then.

Before I start the test, I have a consent form that I need you to sign. This consent form states that any identifying information about you will be kept confidential and your name will not be associated with the recording. One copy of the form is for you to keep and one copy of the form is for my records. I'll give you some time to read and sign the form. If you have any questions, please let me know.

[Give participant two copies of consent form and give them time to read/sign the form.]

[Take signed copy of form and let participant have unsigned copy.]

Now that you've signed the consent form, do you have any questions before we start?

[Pause to allow participant to ask questions.]

Okay, first I'd like you to answer some general questions.

[Give demographic pre-test questions to participant and pause to let participant answer questions.]

Great. Now, I am going to start recording the study.

[Press record on the screen/audio recording software.]

Now I'd like for you to complete three short tasks using interface mock-ups of Duke Libraries' website. It would be really helpful if you would share your thoughts and observations as you are completing the tasks, so try to think aloud as much as you can. Like I said, there are no right or wrong answers.

For each task, I will hand you a print out of the task and read the task aloud. I will also direct you to the interface to use for each task.

[Give participant print out of task and point participant to this page:

<http://people.duke.edu/~tcrich/mockup/potter/catalog-screen.html>.]

TASK ONE

For this task, imagine that your only affiliation with Duke University is that you have a Duke Library Card. You would like to read the book, **Harry Potter and the Half-Blood Prince**.

- Show me the steps you would take to request this book given that your only affiliation with Duke University is that you have a Duke Library Card.

[Encourage participant to think aloud as necessary.]

Now I'd like for you to answer a few questions about this task under Task 1 on your handout.

[Give participant Task 1 questions, pause to let participant answer questions, and set up the page to start Task 2.]

[Give participant print out of task and point participant to this page:

<http://people.duke.edu/~tcrich/mockup/mixed-location/catalog-screen.html>.]

TASK TWO

Now, I'd like you to imagine that you are a Duke student and you have a Duke NetID and Password. You are completing research for a project about Doris Duke and you need to access the book, **Too Rich: The Family Secrets of Doris Duke**.

- Show me how you would request the physical hard copy of this book from the **Perkins/Bostock Library** and have it delivered to **Lilly Library**.

[Encourage participant to think aloud as necessary.]

Now I'd like for you to answer a few questions about this task under Task 2 on your handout.

[Give participant Task 2 questions, pause to let participant answer questions, and set up the page to start Task 3.]

[Give participant print out of task and point participant to this page:

<http://people.duke.edu/~tcrich/mockup/multi-volume-serial/catalog-screen.html>.]

TASK THREE

Again, I'd like you to imagine that you are a Duke student and you have a Duke NetID and Password. You are conducting research for your computer science class and you need to view the physical hard copies of multiple volumes of older journals.

- Show me how you would request the **entire volumes 43 and 44** of the **Journal of the ACM** from the **Library Service Center** and have them delivered to **Ford Library**.

[Encourage participant to think aloud as necessary.]

Now I'd like for you to answer a few questions about this task under Task 3 on your handout.

[Give participant Task 3 questions and pause to let participant answer questions.]

You've completed all of the tasks and before you go, I just have a few more questions about your overall experience using these interface mock-ups to complete these tasks. First, there are a few post-test questions on your handout. After you finish those, I will ask you a few more qualitative questions.

[Give participant post-test questions and pause to let participant answer questions.]

Great. Now I'll be asking you the final questions.

1. While you were completing these tasks, were you ever unsure of what to do next?

[Using observation notes for when participant seemed confused or paused, ask participant to recall what they were thinking at the time. Refer participant to interface mock-ups for particular task if needed.]

2. Was there anything confusing about using these interfaces?
3. Was there anything you found to be helpful while using these interfaces?
4. If you could change or improve the process for requesting items using these interfaces, what would you change?
5. Is there anything else you'd like to share about your experience completing these tasks?

[Ask participant any clarifying questions.]

We've reached the end of the session. I'll need to you sign this receipt to confirm that you received your compensation.

[Wait for participant to sign receipt and hand them their compensation.]

Thanks so much for participating!

[Be sure to clear browser cache and set up for the next participant.]

Appendix E: “Get this title” Request Interface Revisions

Duke University Libraries uses three sequential interfaces (referred to as “Get this title” interfaces) for requesting items that are on the shelf or items that are stored offsite at Duke’s Library Service Center. Once a user clicks a “Request” link or the green “Request” button from a catalog record, a user is guided to complete tasks in these three interfaces. The first interface displays the item(s) that can be requested and is where the user initiates a request. Once a user initiates a request, the second interface prompts the user for a delivery location and to actually place the request. The third interface provides the user with a confirmation status.

Task 1: Request Interface Revisions

[My Accounts](#)
[Ask a Librarian](#)

[Search & Find](#)
[Using the Library](#)
[Research Support](#)
[Course Support](#)
[Libraries](#)
[About](#)

[Home](#)
[Get this title](#)

You are logged in, **Bendte L Fagge**. [Logout](#)

Get this title

Title: *Harry Potter and the half-blood prince* / by J.K. Rowling ; illustrations by Mary GrandPré.
Author: Rowling, J. K.
Publication Details: New York : Arthur A. Levine Books, c2005.

Summary: *Harry Potter and the Half-Blood Prince brings us Harry Potter's sixth year at Hogwarts School of Witchcraft and Wizardry as Lord Voldemort becomes ever more powerful with his followers increasing day ...*

Item not available?

[Request from another library](#)

Description	Item status	Sub-library	Collection	Location	Copy Number	Due date	GetIt@Duke
c. 5 (Show Details)	Standard Loan	Perkins/Bostock Library	Stacks	PR6068.O93 H376 2005	5	On Shelf	Request
c. 4 (Show Details)	Standard Loan	Perkins/Bostock Library	Stacks	PR6068.O93 H376 2005	4	On Shelf	Request
c. 3 (Show Details)	Standard Loan	Perkins/Bostock Library	Stacks	PR6068.O93 H376 2005	3	On Shelf	Request
c. 2 (Show Details)	Missing	Perkins/Bostock Library	Stacks	PR6068.O93 H376 2005	2	Missing	
c. 1 (Show Details)	Standard Loan	Perkins/Bostock Library	Stacks	PR6068.O93 H376 2005	1	On Shelf	Request

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

[Faculty & Instructors](#)
[Graduate Students](#)
[Undergraduate Students](#)
[International Students](#)

[Alumni](#)
[Donors](#)
[Visitors](#)
[Patrons with Disabilities](#)

[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

Figure 53. Current first interface that a user would see if they were completing Task 1. This interface is used to initiate a request.

[My Accounts](#)
[Ask a Librarian](#)

[Search & Find](#)
[Using the Library](#)
[Research Support](#)
[Course Support](#)
[Libraries](#)
[About](#)

You are logged in, [Jane Doe](#) | [Logout](#)

Get this title

Title: Harry Potter and the half-blood prince
Author: Rowling, J. K.
Publication Details: New York: Arthur A. Levine Books, c2005.

Description	Library	Item Status	Request
C. 1 (Show Details)	Perkins/Bostock Library	On Shelf	Request
C. 2 (Show Details)	Perkins/Bostock Library	On Shelf	Request
C. 3 (Show Details)	Perkins/Bostock Library	On Shelf	Request

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors
 Graduate Students
 Undergraduate Students
 International Students

Alumni
 Donors
 Visitors
 Patrons with Disabilities

[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

[Drupal Sign In](#)

Figure 54. Revised first interface that participants used in this study to initiate a request as part of completing Task 1. This interface has been simplified by removing the summary of the book, certain columns of data (Item status, Collection, Location, and Copy Number), and the “Item not available?” box. Column headings have also been revised: “Sub-library” has been changed to “Library”, “Due date” has been changed to “Item Status”, and “GetIt@Duke” has been changed to “Request”.

DUKE UNIVERSITY LIBRARIES | My Accounts | Ask a Librarian | Search articles, books, [magnifying glass icon]

Search & Find | Using the Library | Research Support | Course Support | **Libraries** | About

[Home](#) **Get this title** | You are logged in, **Bendte L Fagge**. [Logout](#)

Get this title

Title: **Harry Potter and the half-blood prince** / by J.K. Rowling ; illustrations by Mary GrandPré.
Author: Rowling, J. K.
Publication Details: New York : Arthur A. Levine Books, c2005.

Summary: **Harry Potter and the Half-Blood Prince** brings us **Harry Potter's** sixth year at **Hogwarts School of Witchcraft and Wizardry** as **Lord Voldemort** becomes ever more powerful with his followers increasing day ...

Choose a Pickup or Delivery location for the requested item:

Location :

Choose a last-needed date:

Not Needed after: (Date format : yyyyymmdd)

[Place Hold/Recall Request](#)

NOTE: Use this **request form** only for materials in the Duke Libraries.
 Use [Document Delivery Services](#) to request a PDF of an article in a journal at the Library Service Center (LSC).

View items you have requested through [My Library Account](#).

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

[Twitter](#) [Facebook](#) [YouTube](#) [Instagram](#) [RSS](#)

Duke UNIVERSITY

Figure 55. Current second interface that a user would see if they were completing Task 1. This interface is used to select a delivery location, a last-needed date, and to actually place a request.

DUKE UNIVERSITY LIBRARIES | My Accounts | Ask a Librarian | Search [magnifying glass icon]

Search & Find | Using the Library | Research Support | Course Support | **Libraries** | About

[Home](#) **Get this title** | You are logged in, **Jane Doe** | [Logout](#)

Get this title

Title: **Harry Potter and the half-blood prince**
Author: **Rowling, J. K.**
Publication Details: **New York: Arthur A. Levine Books, c2005.**

Choose a pickup or delivery location for the requested item:

[Place Request](#)

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

[Twitter](#) [Facebook](#) [YouTube](#) [Instagram](#) [RSS](#)

Duke UNIVERSITY

[Drupal Sign In](#)

Figure 56. Revised second interface that participants used in this study to select a delivery location and place request as part of completing Task 1. This interface has been simplified so that all a user has to do is choose a delivery location and then click the “Place Request” button. The book summary has been removed because presumably if a user has reached this stage, then they most likely know the summary of the book they are requesting. Also, the last-needed date and notes about the request form have been removed so that users do not have to make additional decisions about when they last

need the book or read additional notes about how to request an item. Duke Libraries' goal is for the user to simply be able to request an item without placing additional cognitive load on the user to make additional decisions other than where they would like their item delivered when placing a request. Also, the text of the button used for placing a request has been changed from "Place Hold/Request Recall" to "Place Request".

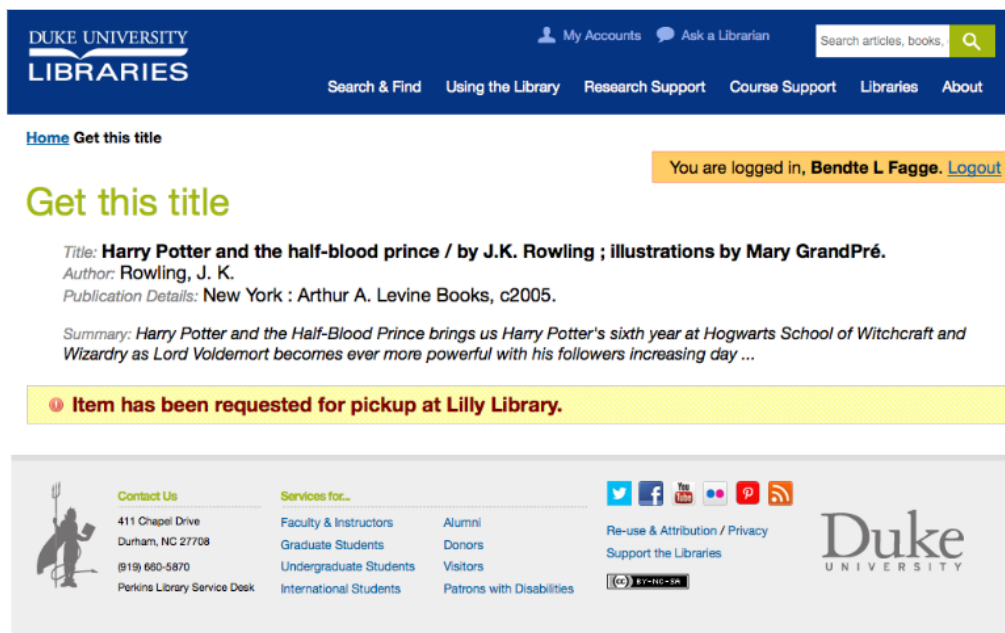


Figure 57. Current third interface that a user would see if they were completing Task 1. This interface is used to display a confirmation for each request made.

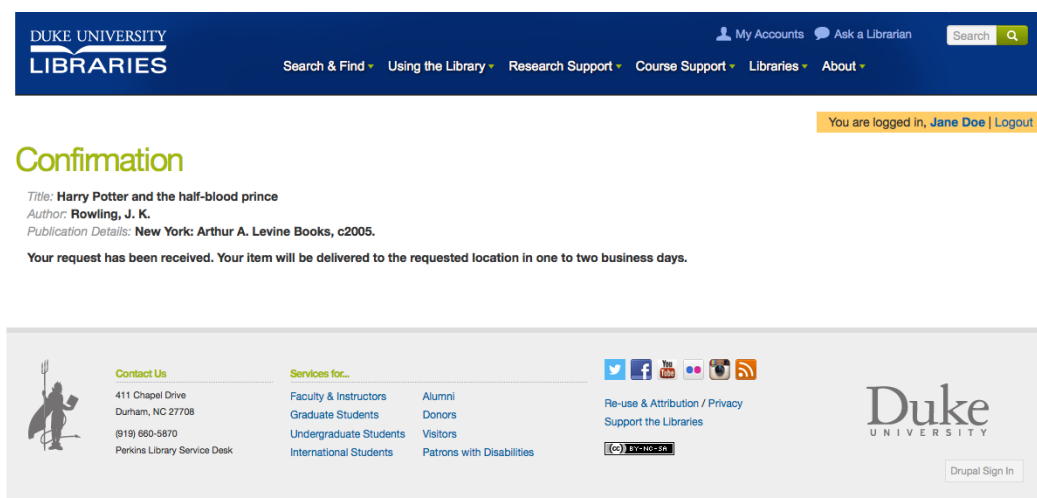


Figure 58. Revised third interface that participants used in this study to view the confirmation of the request as part of completing Task 1. The summary of the book has been removed as well as the red text / yellow box that displayed the confirmation.

Task 2: Request Interface Revisions

DUKE UNIVERSITY LIBRARIES

Search articles, books

Search & Find Using the Library Research Support Course Support Libraries About

Home Get this title

You are logged in, **Bendte L Fagge**. [Logout](#)

Get this title

Title: **Too rich : the family secrets of Doris Duke / Pony Duke and Jason Thomas.**
 Author: Duke, Pony, 1937-
 Publication Details: New York : HarperCollins, c1996. 1st ed.

Item not available?
[Request from another library](#)

Description	Item status	Sub-library	Collection	Location	Copy Number	Due date	GetIt@Duke
c. 1 (Show Details)	Standard Loan	Perkins/Bostock Library	Stacks	CT275.D8769 D85 1996	1	On Shelf	Request
c. 1 (Show Details)	Reading Room use only	University Archives	University Archives, On-site	973.9092 D877, T668, 1996	1	On Shelf	Request for onsite use

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...
 Faculty & Instructors
 Graduate Students
 Undergraduate Students
 International Students
 Alumni
 Donors
 Visitors
 Patrons with Disabilities

[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

Duke UNIVERSITY

Figure 59. Current first interface that a user would see if they were completing Task 2. This interface is used to initiate a request.

DUKE UNIVERSITY LIBRARIES

Search articles, books

Search & Find Using the Library Research Support Course Support Libraries About

You are logged in, **Jane Doe**. [Logout](#)

Get this title

Title: **Too rich : the family secrets of Doris Duke**
 Author: **Duke, Pony, 1937-**
 Publication Details: **New York : HarperCollins, c1996.**

Description	Library	Collection	Location	Item Status	Request
C. 1 (Show Details)	Perkins/Bostock Library	Stacks	CT275.D8769 D85 1996	On Shelf	Request
C. 1 (Show Details)	University Archives		973.9092 D877, T668, 1996	Reading Room Use Only	Request for onsite use

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...
 Faculty & Instructors
 Graduate Students
 Undergraduate Students
 International Students
 Alumni
 Donors
 Visitors
 Patrons with Disabilities

[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

Duke UNIVERSITY

Drupal Sign In

Figure 60. Revised first interface that participants used in this study to initiate a request as part of completing Task 2. This interface has been simplified by removing the summary of the book, certain columns of data (Item status and Copy Number), and the “Item not available?” box. Column headings have also been revised: “Sub-library” has been changed to “Library”, “Due date” has been changed to “Item Status”, and “GetIt@Duke” has been changed to “Request”.

DUKE UNIVERSITY LIBRARIES

My Accounts Ask a Librarian Search articles, books, [magnifying glass]

Search & Find Using the Library Research Support Course Support Libraries About

[Home](#) [Get this title](#)

You are logged in, [Bendte L. Fagge](#). [Logout](#)

Get this title

Title: **Too rich : the family secrets of Doris Duke / Pony Duke and Jason Thomas.**
 Author: **Duke, Pony, 1937-**
 Publication Details: **New York : HarperCollins, c1996. 1st ed.**

Choose a Pickup or Delivery location for the requested item:

Location :

Choose a last-needed date:

Not Needed after: (Date format : yyyyymmdd)

[Place Hold/Recall Request](#)

NOTE: Use this **request form** only for materials in the Duke Libraries.
 Use [Document Delivery Services](#) to request a PDF of an article in a journal at the Library Service Center (LSC).

[View items you have requested through My Library Account.](#)

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

Re-use & Attribution / Privacy
 Support the Libraries

DUKE UNIVERSITY

Figure 61. Current second interface that a user would see if they were completing Task 2. This interface is used to select a delivery location, a last-needed date, and to actually place a request.

DUKE UNIVERSITY LIBRARIES

My Accounts Ask a Librarian Search [magnifying glass]

Search & Find Using the Library Research Support Course Support Libraries About

You are logged in, [Jane Doe](#) | [Logout](#)

Get this title

Title: **Too rich : the family secrets of Doris Duke**
 Author: **Duke, Pony, 1937-**
 Publication Details: **New York : HarperCollins, c1996.**

Choose a pickup or delivery location for the requested item:

[Place Request](#)

Contact Us
 411 Chapel Drive
 Durham, NC 27708
 (919) 660-5870
 Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

Re-use & Attribution / Privacy
 Support the Libraries

DUKE UNIVERSITY

[Drupal Sign In](#)

Figure 62. Revised second interface that participants used in this study to select a delivery location and place request as part of completing Task 2. This interface has been simplified so that all a user has to do is choose a delivery location and then click the “Place Request” button. The last-needed date and notes about the request form have been removed. Also, the text of the button used for placing a request has been changed from “Place Hold/Request Recall” to “Place Request”.

The screenshot shows the top navigation bar of the Duke University Libraries website. The header includes the logo, navigation links (Search & Find, Using the Library, Research Support, Course Support, Libraries, About), and a search bar. A user is logged in as Bendte L Fagge. The main content area displays the title 'Too rich : the family secrets of Doris Duke / Pony Duke and Jason Thomas.' by Duke, Pony, 1937-. A yellow banner with a red icon and text states: 'Item has been requested for pickup at Lilly Library.' The footer contains contact information, services for various groups, social media links, and the Duke University logo.

Figure 63. Current third interface that a user would see if they were completing Task 2. This interface is used to display a confirmation for each request made.

The screenshot shows the top navigation bar of the Duke University Libraries website. The header includes the logo, navigation links (Search & Find, Using the Library, Research Support, Course Support, Libraries, About), and a search bar. A user is logged in as Jane Doe. The main content area displays the title 'Too rich: the family secrets of Doris Duke' by Duke, Pony, 1937-. Below the title, it states: 'Your request has been received. Your item will be delivered to the requested location in one to two business days.' The footer contains contact information, services for various groups, social media links, and the Duke University logo.

Figure 64. Revised third interface that participants used in this study to view the confirmation of the request as part of completing Task 2. The red text / yellow box that displayed the confirmation has been removed.

Task 3: Request Interface Revisions

[My Accounts](#)
[Ask a Librarian](#)

[Search & Find](#)
[Using the Library](#)
[Research Support](#)
[Course Support](#)
[Libraries](#)
[About](#)

[Home](#) **Get this title**

You are logged in, **Bendte L Fagge**. [Logout](#)

Get this title

Title: **Journal of the ACM [serial].**

Publication Details: New York : Association for Computing Machinery, 1996-

Item not available?

[Request from another library](#)

Description	Item status	Sub-library	Collection Location	Copy Number	Due date	GetIt@Duke
v. 44: pp. 527 + 895 (1997) c. 1 (Show Details)	LSC	Library Service Center	Periodicals	1	LSC	Request
v. 44: pp. 1 + 526 (1997) c. 1 (Show Details)	LSC	Library Service Center	Periodicals	1	LSC	Request
v. 43: pp. 601 + 1092 (1996) c. 1 (Show Details)	LSC	Library Service Center	Periodicals	1	LSC	Request
v. 43: pp. 1 + 600 (1996) c. 1 (Show Details)	LSC	Library Service Center	Periodicals	1	LSC	Request

Contact Us

411 Chapel Drive
Durham, NC 27708
(919) 660-5870
Perkins Library Service Desk

Services for...

- Faculty & Instructors
- Graduate Students
- Undergraduate Students
- International Students

- Alumni
- Donors
- Visitors
- Patrons with Disabilities

[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

Figure 65. Current first interface that a user would see if they were completing Task 3. This interface is used to initiate a request.

[My Accounts](#)
[Ask a Librarian](#)

[Search & Find](#)
[Using the Library](#)
[Research Support](#)
[Course Support](#)
[Libraries](#)
[About](#)

You are logged in, [Jane Doe](#) | [Logout](#)

Get this title

Title: *Journal of the ACM [serial].*
Publication Details: New York : Association for Computing Machinery, 1996-

Description	Library	Item Status	Request	Request Multiple Items
v.43:pp.1+600(1996) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>
v.43:pp.601+1092(1996) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>
v.44:pp.1+526(1997) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>
v.44:pp.527+895(1997) c.1 (Show Details)	Library Service Center	Available	Request	<input type="checkbox"/>

Contact Us
411 Chapel Drive
Durham, NC 27708
(919) 660-5870
Perkins Library Service Desk

Services for...

Faculty & Instructors	Alumni
Graduate Students	Donors
Undergraduate Students	Visitors
International Students	Patrons with Disabilities

[Re-use & Attribution / Privacy](#)
[Support the Libraries](#)

[Drupal Sign In](#)

Figure 66. Revised first interface that participants used in this study to initiate a request as part of completing Task 3. This interface has been simplified by removing certain columns of data (Collection, Location, Copy Number, and Due Date), and the “Item not available?” box. Column headings have also been revised: “Sub-library” has been changed to “Library”, “GetIt@Duke” has been changed to “Request”, and an additional column has been added for requesting multiple items.

DUKE UNIVERSITY LIBRARIES

My Accounts Ask a Librarian Search articles, books

Search & Find Using the Library Research Support Course Support Libraries About

Home [Get this title](#)

You are logged in, [Bendte L Fagge](#), [Logout](#)

Get this title

Title: **Journal of the ACM [serial]**.
Publication Details: New York : Association for Computing Machinery, 1996-

Choose a Pickup or Delivery location for the requested item:

Location :

Choose a last-needed date:

Not Needed after: (Date format : yyyymmdd)

[Place Hold/Recall Request](#)

NOTE: Use this request form only for materials in the Duke Libraries.
Use [Document Delivery Services](#) to request a PDF of an article in a journal at the Library Service Center (LSC).

View items you have requested through [My Library Account](#).

Contact Us
411 Chapel Drive
Durham, NC 27708
(919) 660-5870
Perkins Library Service Desk

Services for...
Faculty & Instructors
Graduate Students
Undergraduate Students
International Students

Alumni
Donors
Visitors
Patrons with Disabilities

[Twitter](#) [Facebook](#) [YouTube](#) [Instagram](#) [Pinterest](#) [RSS](#)

Re-use & Attribution / Privacy
Support the Libraries

[Creative Commons License](#)

Duke UNIVERSITY

Figure 67. Current second interface that a user would see if they were completing Task 3. This interface is used to select a delivery location, a last-needed date, and to actually place a request.

DUKE UNIVERSITY LIBRARIES

My Accounts Ask a Librarian Search articles, books

Search & Find Using the Library Research Support Course Support Libraries About

You are logged in, [Bendte L Fagge](#), [Logout](#)

Get this title

Title: **Journal of the ACM [serial]**.
Publication Details: New York : Association for Computing Machinery, 1996-

Location:

[Place Request](#)

Contact Us
411 Chapel Drive
Durham, NC 27708
(919) 660-5870
Perkins Library Service Desk

Services for...
Faculty & Instructors
Graduate Students
Undergraduate Students
International Students

Alumni
Donors
Visitors
Patrons with Disabilities

[Twitter](#) [Facebook](#) [YouTube](#) [Instagram](#) [Pinterest](#) [RSS](#)

Re-use & Attribution / Privacy
Support the Libraries

[Creative Commons License](#)

Duke UNIVERSITY

Figure 68. Revised second interface that participants used in this study to select a delivery location and place request as part of completing Task 3. This interface has been simplified so that all a user has to do is choose a delivery location and then click the “Place Request” button. The last-needed date and notes about the request form have been removed. Also, the text of the button used for placing a request has been changed from “Place Hold/Request Recall” to “Place Request”.

The screenshot shows the top navigation bar of the Duke University Libraries website. The header includes the logo, navigation links (Search & Find, Using the Library, Research Support, Course Support, Libraries, About), and a search bar. Below the header, there is a message: "Home Get this title". A yellow box on the right says "You are logged in, Bendte L Fagge. Logout". The main content area displays the title "Journal of the ACM [serial]" and publication details "New York : Association for Computing Machinery, 1996-". A yellow box with a red icon and text states: "Item has been requested for pickup at Music Library." The footer contains contact information, services for various groups, social media links, and the Duke University logo.

Figure 69. Current third interface that a user would see if they were completing Task 3. This interface is used to display a confirmation for each request made.

The screenshot shows the revised version of the Duke University Libraries website. The header and navigation bar are identical to Figure 69. The main content area displays the title "Journal of the ACM [serial]" and publication details "New York : Association for Computing Machinery, 1996-". A message states: "Your request has been received. Your item will be delivered to the requested location in one to two business days." The footer contains contact information, services for various groups, social media links, and the Duke University logo. A "Drupal Sign In" button is visible in the bottom right corner.

Figure 70. Revised third interface that participants used in this study to view the confirmation of the request as part of completing Task 3. The red text / yellow box that displayed the confirmation has been removed.